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The Metal Worker

A WEEKLY JOURNAL OF THE ROOFING, CORNICE, STOVE, TIN, PLUMBING AND HEATING TRADES.

With which is Incorporated The Stove and Tin Trade Journal, the Sheet Metal Builder, and Metal.

VOL. LIII. NUMBER 17. | NEW YORK AND CHICAGO, APRIL 28, 1900. | ONE DOLLAR A YEAR. SINGLE COPIES, 5 CENTS.

IRON STONE STOVE LINING.

Fits any Stove.

Plastered in like mortar. *Gets as hard as brick.*

MY FACE ON EVERY BAG.

PRICES—$1.50 per doz. 10 lb. bags in 2 doz. lots. $1.00 per doz. 6 lb. bags in 3 doz. lots. ONE CENT per lb. in bulk in Barrel.

Address WILLIAM M. NEWTON, Albany, N. Y.

For Steam and Hot Water Heating.

You Want the Best—We Have It.

SEND FOR CATALOGUE AND INVESTIGATE FOR YOURSELF.

GORTON & LIDGERWOOD CO.,

Old Colony Bldg., CHICAGO. 96 Liberty St., NEW YORK.
77 Oliver St., BOSTON. Prudential Bldg., ATLANTA, GA.

GORTON "Side Feed" BOILERS

Tinplates } Stewart Trench & Co., NEW YORK.

Gray Iron Castings. S. CHENEY & SON. Manlius, N. Y.

Extracts Heat and Steady Profits.

The PARAGON FURNACE gets every bit of heat out of your customer's coal bill that it is possible to get out of coal.

That is why it gets every bit of trade for you out of your customer that it is possible to get, if you have sold him a Paragon.

Likewise, EXCELSIOR RANGES, PARAGON STEAM GENERATORS and PARAGON HOT WATER CIRCULATORS, all money makers for you.

ISAAC A. SHEPPARD & CO., New York, Philadelphia, Baltimore.

American Sheet Steel Company
Manufacturers of
Black and
Galvanized Sheets
Battery Park
Building
New York

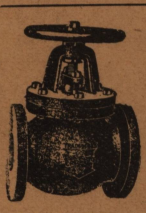
SOLID PORCELAIN LAVATORIES.

We are now prepared to furnish this high class fixture at as low a price as the marble lavatories of good quality. May we send you illustration?

E. S. WHEELER & CO.,
256 Water Street, New Haven, Conn.
New York Store, 10 and 12 Cliff Street.

IF the DIGHTON FURNACE CO. make a good Furnace and will sell it to you at a considerable less price than other makers charge for theirs, isn't it good business for you to know more about the DIGHTON Furnace?

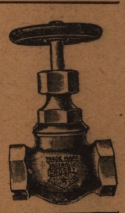
Follansbee Brothers Co.
328-330-332 Second Avenue
Pittsburgh
Manufacturers
Continuous Roofing Tin
in rolls, plain or painted
14, 20 or 28 inches wide.
"Allegheny" "Raymond" and
"Best Redipped" in stock.



CROSBY SPRING-SEAT GLOBE and ANGLE VALVES, IRON and BRASS.

All working parts renewable without taking the valve from piping. All parts interchangeable. Guaranteed not to leak at high pressure. Send for circular.

CROSBY STEAM GAGE & VALVE CO.,
BOSTON: 95 Oliver St. NEW YORK: 78 John St. CHICAGO: 21-23 W. Lake St.

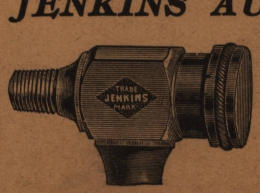


FOR SALE:

Cheap, **Complete Sturtevant Blowing and Heating System,** containing 3000 feet of heating surface.

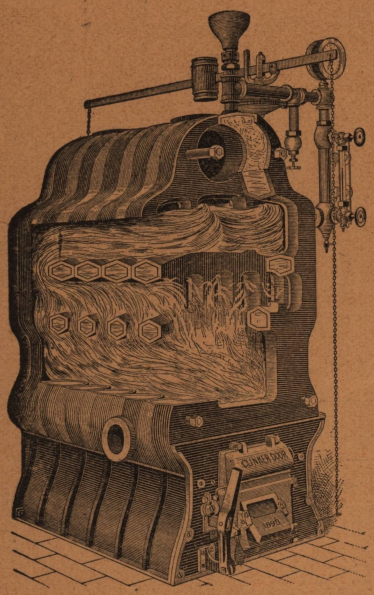
KIELEY & MUELLER,
7 to 17 West 13th St., NEW YORK.

JENKINS AUTOMATIC AIR VALVES

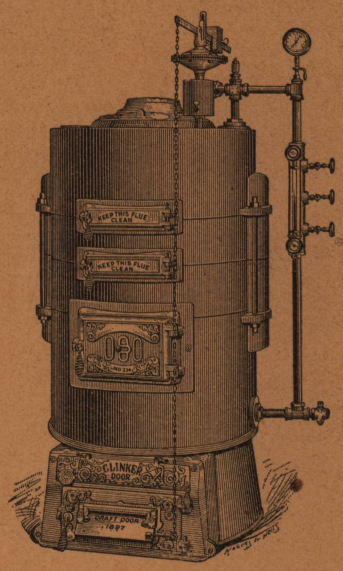


with Drip-pipe Connections insure perfect circulation. You are not annoyed with escaping steam or dripping of water. They are stamped with our Trade-Mark.

JENKINS BROTHERS,
New York, Boston, Chicago Philadelphia.



"When we have done it, we have done all that is in our power and all that needs."—LOCKE.



After a manufacturer has invested thousands in equipment for producing goods acknowledged to be

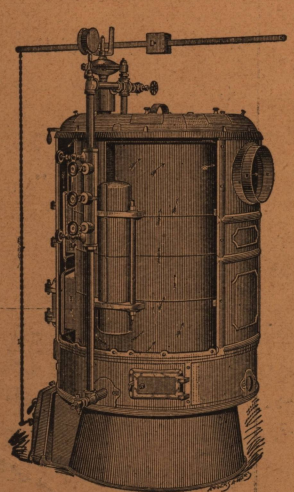
ideal in excellence,

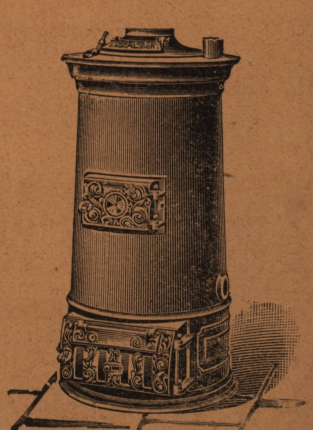
the temptation is to say, "This will do." Yet, each year we add thousands of dollars in equipment, for our motto is "This and better will do."

AMERICAN RADIATOR COMPANY

Lake and Dearborn Sts., Chicago

New York	**Philadelphia**	**Buffalo**
St. Louis	**Minneapolis**	**Denver**

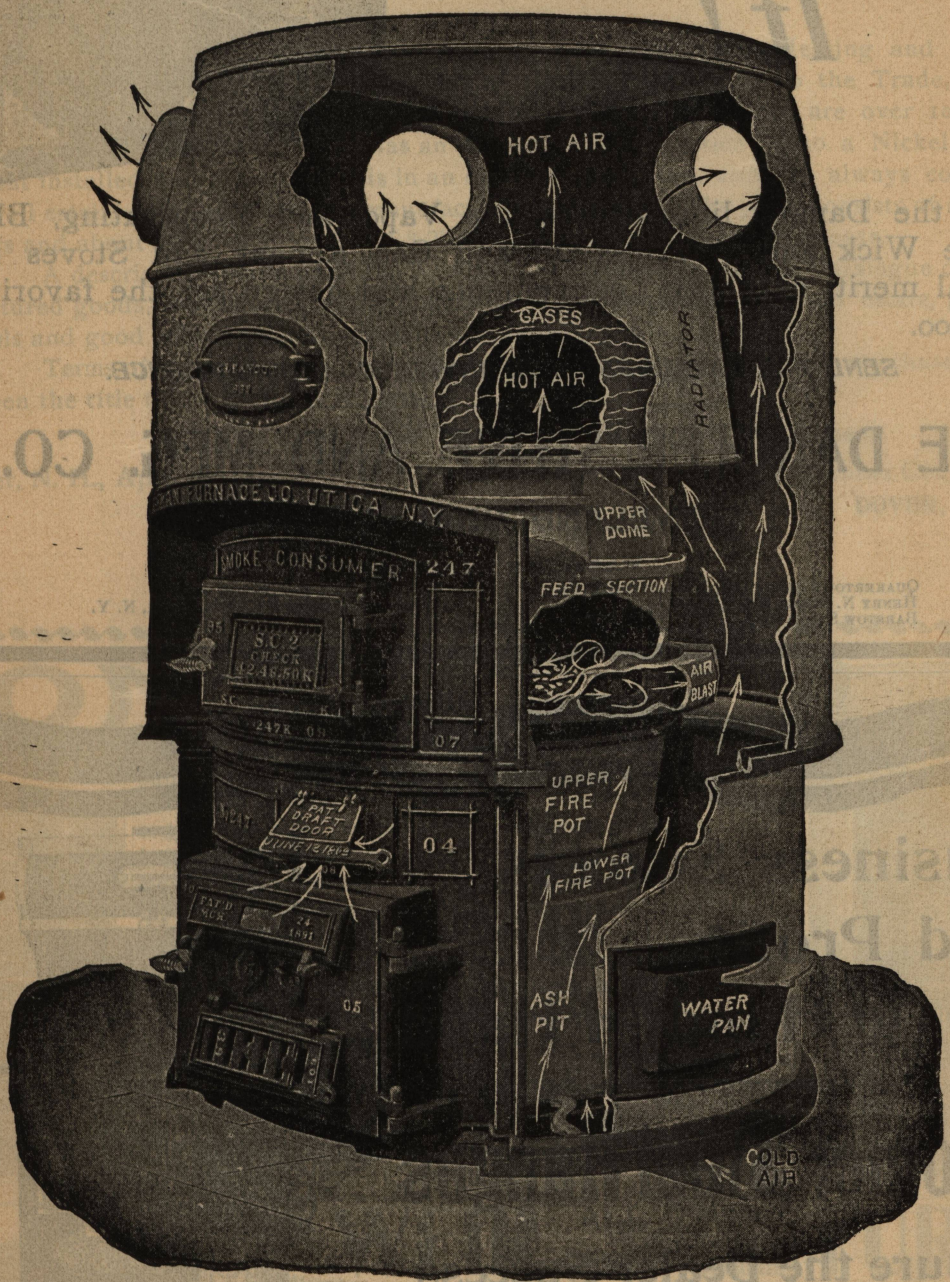




KERNAN

"200" SERIES SOFT COAL

SMOKE CONSUMER FURNACE.



A HOT BLAST APPLIANCE which is DURABLE.

An INDEPENDENT ATTACHMENT and NOT INTEGRAL with the FEED SECTION.

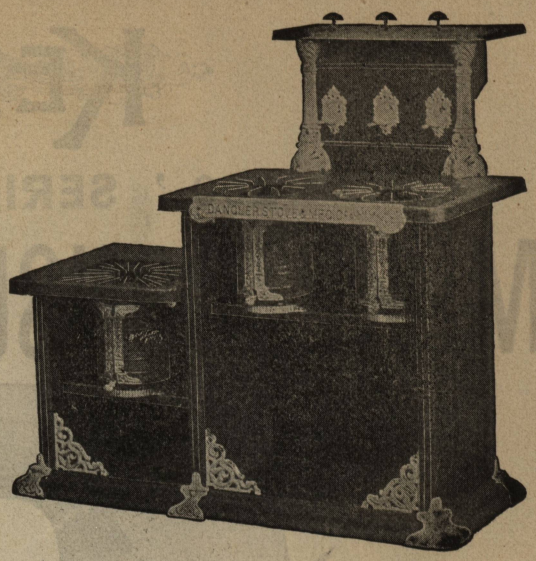
INTERNATIONAL HEATER CO.,

Largest Makers of Heaters in the World,

UTICA, N. Y.

NEW YORK, BOSTON, CHICAGO.

All Admit It!



That the Dangler lines of Gasoline Vapor and Evaporating, Blue Flame Wick and Wickless Oil and Gas Ranges and Stoves for special merit, durability, convenience and design are the favorites for 1900.

SEND FOR CATALOGS. WE INVITE CORRESPONDENCE.

THE DANGLER STOVE AND MFG. CO.,

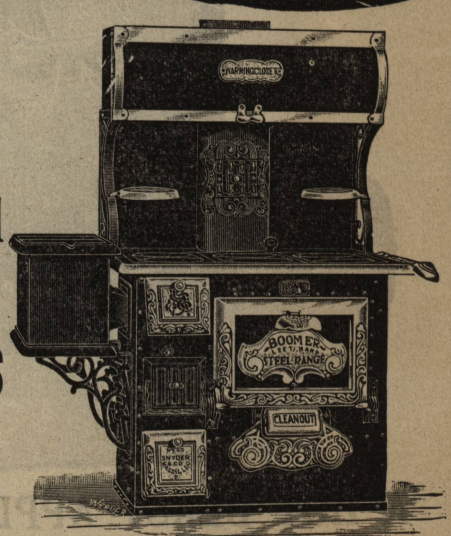
CLEVELAND, OHIO, U. S. A.

EASTERN AGENTS:

QUAKERTOWN STOVE CO., PHILADELPHIA, PA.
HENRY N. CLARK & CO., BOSTON, MASS.
BARSTOW STOVE CO., BOSTON, MASS.
M. P. HOWARD, BALTIMORE, MD.
EUGENE MUNSELL & CO., NEW YORK, N. Y.

Business Success and Profit . . Go Hand in Hand

Boomer Steel Ranges



"Boomer Steel Range."

Insure the Dealer Success and Profit.

Boomer Steel Ranges, as well as Boomer Furnaces, are made of only the best materials by experienced workmen. Better cannot be made. Our new catalogue is awaiting your address. Send for it to-day.

HESS, SNYDER & CO., - - - Masillon, O.

STOVE WORKS
AT
PUBLIC AUCTION.

The undersigned will sell at Public Auction on the premises, Saturday, May 12th, 1900, at 12 o'clock noon, the extensive Stove Works of the Somersworth Machine Company at Salmon Falls, New Hampshire, situated on the Western and Northern divisions of the Boston & Maine Railroad.

This Plant has been in operation since 1848, manufacturing Heating and Cooking Stoves, Furnaces, Sinks, Hollow Ware and all Castings pertaining to the Trade, and has put upon the market over 60 different patterns of Stoves, and there are over 100,000 in use in New England to-day. It has an Electric Light System; also a Nickel Plating Plant installed, and the property is in an excellent condition, and has always conducted a well established and profitable manufacturing business. The plant consists of 22 buildings and about 40 acres of land and 8 Tenement Houses with 14 tenements.

A descriptive catalogue of the buildings, also illustrated Trade Catalogue of manufactured goods, will be mailed on application to the assignee. The real estate, patterns, tools and good will of the business will be offered for sale.

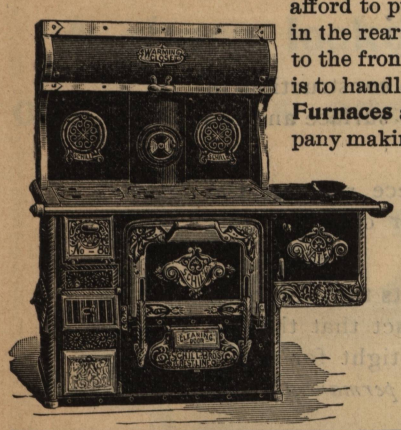
Terms of sale: $1,000 down at time of sale, and the balance of purchase money when the title to the property is given.

B. FRANK NEALLEY, Assignee,
Somersworth Machine Co.,
DOVER, N. H.

Dover, N. H., April 23, 1900.

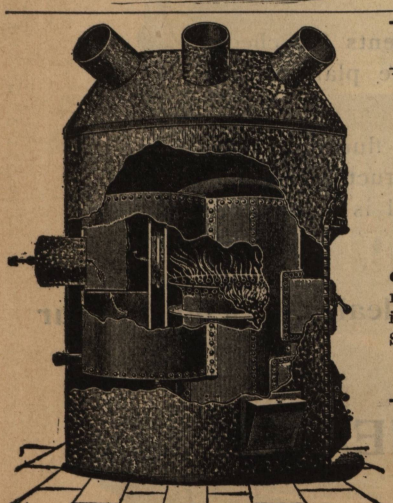
DON'T

handicap yourself in the stern competitive struggle after business by handling an inferior range or furnace. You can't afford to pursue such a course or you will find yourself in the rear division of the procession. The way to get to the front in the furnace and range trade in your town is to handle recognized leaders like **SCHILL** **Furnaces** and **Ranges.** The company making these ranges has a larger capitalization and greater facilities than ever before, and these goods are to be even more widely known in the future than they have been in the past.



Write us for catalogue and discounts.

The Schill Bros. Co.,
Crestline, O.



The WEIR ALL STEEL Gas and Soot Consuming FURNACE

THE BEST AND HEAVIEST STEEL FURNACE MADE.

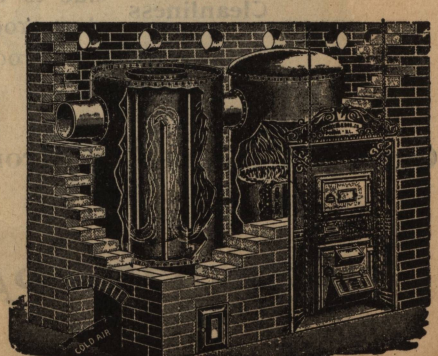
THE ORIGINAL AIR BLAST,

Patented 1882, 1885, 1891, 1897, 1897.

It is Riveted like a Steam Boiler, and absolutely **gas and dust tight.** Through its sectional Fire Pot it is the Original Air Blast or Gas Consuming Furnace. It has been in use since 1882, and now stands without an equal as a Soft Coal Furnace.

——Manufactured by——

The Meyer Furnace Co.,
1300-1304 S. Washington St.,
PEORIA, ILL.



Portable. Made in 5 Sizes. **Write for Catalogue and Prices.** **For Brick Setting. Made in 7 Sizes.**

PRIZER MARVEL FURNACE.

The Strong Points of the Prizer Marvel Furnace:

Great Heating Power due to the large grate surface, the peculiar construction of the fire-pot, the large and effective radiating surface and the perfect combustion of fuel.

Durability due to the solidity of construction, the one-piece radiator, the weight of the parts and to the absence of bolts or cement joints in the main interior construction.

Freedom From Gas due to the fact that there are nc inside parts that can open or pull apart through expansion and to the fact that the gas is consumed by the gas consumer. Some furnaces are gas-tight for a few months or at most for a season or two—the Prizer Marvel is *permanently* gas-proof.

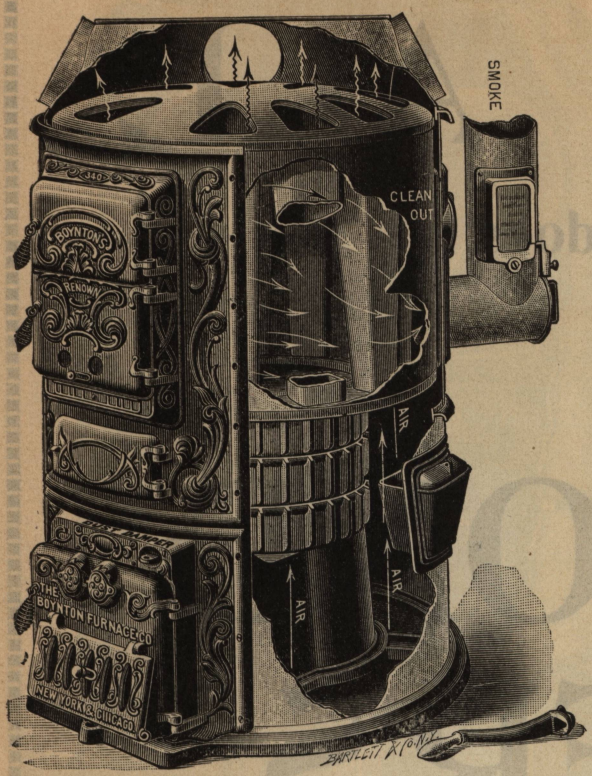
Fuel Economy due to perfect combustion, the proper arrangements for checking the fire, the burning of the gases and the plan of the radiating system.

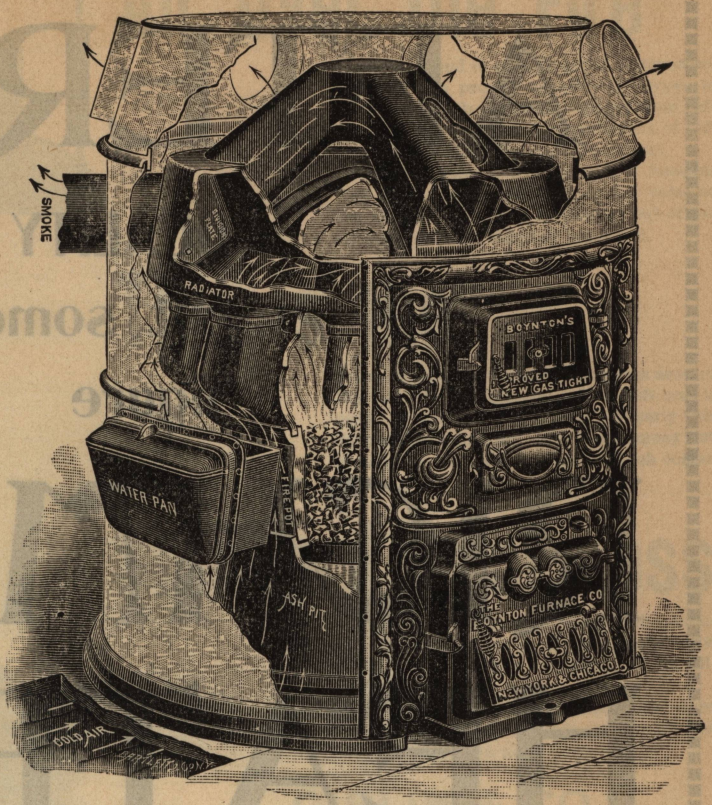
Cleanliness due to the effective and properly located dust flue and to the dust-proof cup sand joints of the interior construction. Some furnaces are dust-proof for a short time—the Prizer Marvel is *permanently* dust-proof.

Our price is another strong point for the progressive dealer. Send for our Catalogue and Prices.

THE PRIZER-PAINTER STOVE & HEATER CO.,

READING, PA.



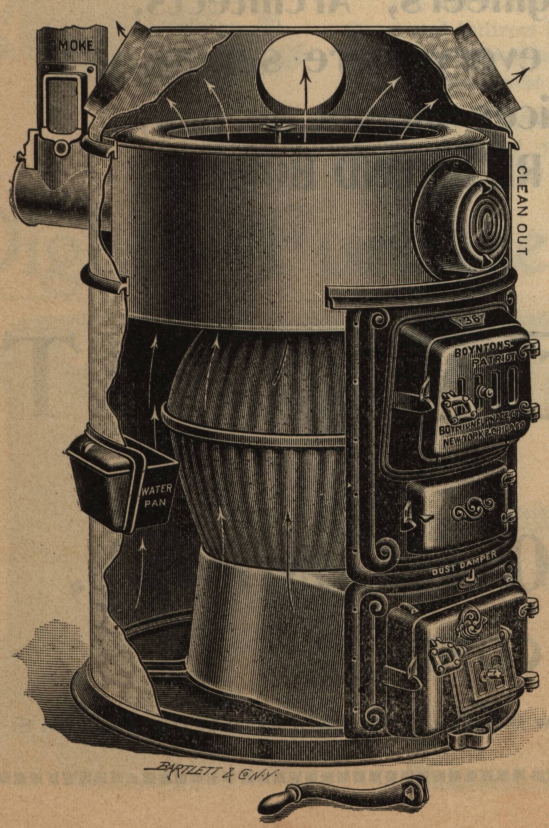


SOME OF OUR 1900 PRODUCTIONS.

THE BOYNTON FURNACE CO.,

147 and 149 Lake Street, CHICAGO. 207 and 209 Water Street, NEW YORK.

A sharp lookout for possible improvement keeps us out of ruts and brings us business.



AFTER ALL

QUALITY does
cut some
figure

RICHMOND HEATERS ARE THE BEST.

Expert Engineers, Architects, and users everywhere say so. Uniform prices means an easy victory for RICHMOND BOILERS.

IF YOU WANT . . .

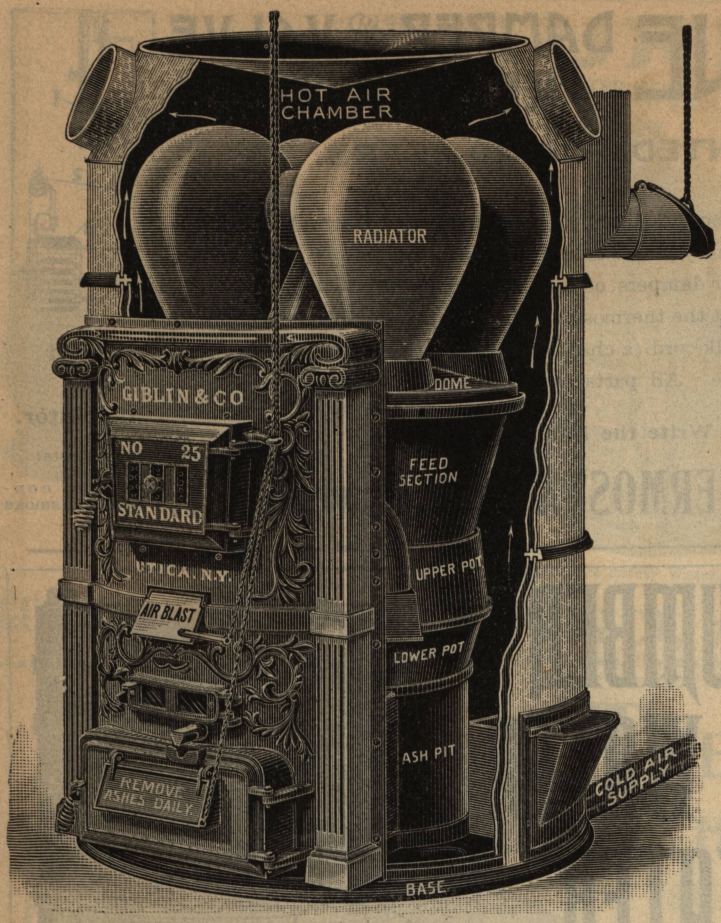
HEATERS THAT HEAT

WRITE TO

THE RICHMOND STOVE COMPANY,

NORWICH, CONN.

BOSTON, 181 Tremont St. NEW YORK, 1037-38 Park Row Building. PHILADELPHIA, 18-24 So. 7th St.



Air Over the Fire

has been found to greatly assist combustion, enabling the proper quantity of oxygen to be mingled with the gases released from soft coal and thereby securing combustion of soft coal without the usual smoke and soot.
Ordinary furnaces burn soft coal because they allow the greatest part of the value of the coal to be wasted by passing out of the furnaces into the chimney unignited.

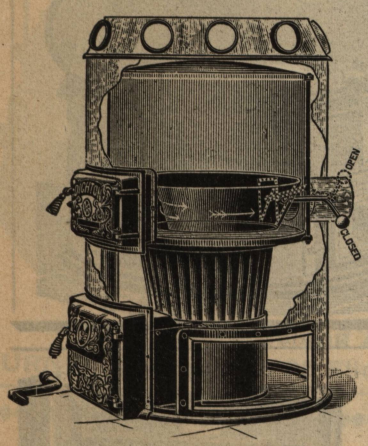
This is the

dense cloud of dark smoke that hangs around the top of the chimney where soft coal is used. If this coal were burned properly this dark smoke would not leave the chimney but in its place the ordinary smoke which comes from burning hard coal. The

Standard Smokeless

furnace burns soft coal with perfect combustion, and its use in soft coal regions for the past ten years has demonstrated its efficiency.
Dealers who have been troubled with other furnaces failing to burn soft coal are invited to correspond with us.

GIBLIN & CO.,
UTICA, N. Y.



IF YOU expect to get your share of the Furnace business in your vicinity this coming Fall, now is the time to arrange your campaign.

There are just two Furnaces that are worth very much consideration. One is the **DIGHTON** and the other isn't.

Better order your sample **DIGHTON** now, look it over, compare it with the other, and see if you think you can really put your energy into talking about massive fronts, name, fame or antiquity, or whether you can best afford to sell an up-to-date, modern, strong heating **DIGHTON** Furnace.

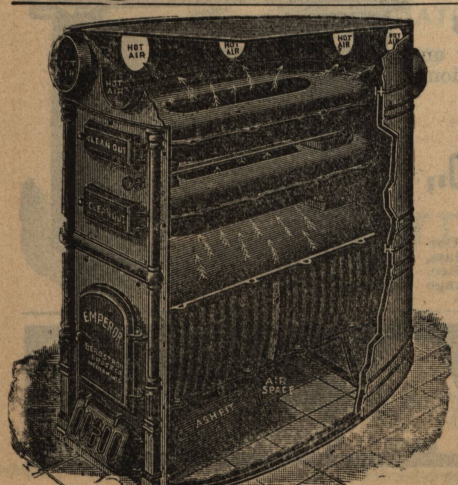
A **DIGHTON** Furnace with a 20-inch fire pot will heat as many cubic feet of space with as little fuel as any other 20-inch fire pot Furnace, and a 31-inch pot **DIGHTON** will heat more cubic feet than any other **single** Furnace, no matter what size the fire pot may be.

There is just as long an indirect fire travel in the **DIGHTON** as in any other Furnace, yet there is three times as much surface exposed to the **direct** rays of the fire.

The size of this space does not allow us to argue the theoretical comparative value of direct and indirect heating surface, but you know just as well as we do that it's the direct surface that does the heating, providing the gases have a downward indirect travel before reaching the smoke pipe.

The **DIGHTON** Furnace from the top of the Ash Pit to the top of the Dome is nearly all direct heating surface.

Dighton Furnace Co., No. Dighton, Mass.



Emperor Furnaces

FOR WOOD.

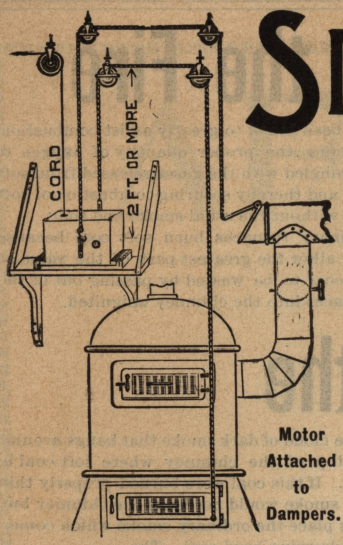
Simple, Safe, Durable. Economical in Fuel.

The Best and Cheapest Line of Wood Furnaces. . . .
Furnished for either Brick or Galvanized Iron Casing.

SEND FOR CATALOGUE.

Bergstrom Bros't Co.

NEENAH, WIS.



Motor Attached to Dampers.

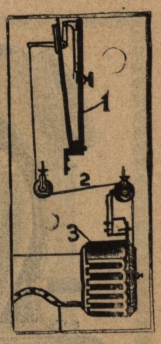
SPRAGUE DAMPER AND VALVE REGULATOR

IS WARRANTED FOR 20 YEARS.

The same thermostatic plate (1) used with the Howard apparatus alone furnishes the primary power to start and stop the heavy brass motor which works the regular dampers of any heating plant. A common wire could be used to connect the thermostat and motor if desired, but we prefer to use a braided oiled silk cord (a chain inside of partition) which is in every way durable and reliable. All parts are guaranteed to work perfectly for twenty years.

Write the Manufacturers,

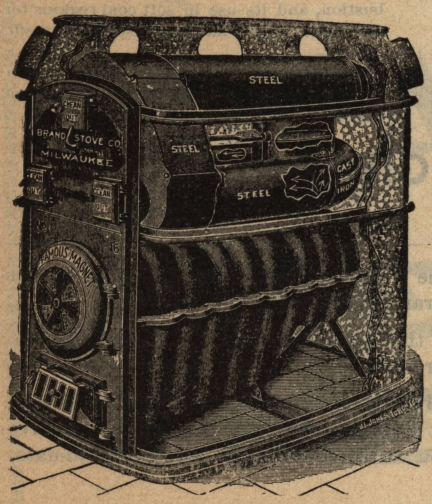
HOWARD THERMOSTAT CO., Oswego, N. Y.



Howard Draft Regulator.

1—Thermostat.
2—Pulleys.
3—Damper connected to smoke pipe only.

BRAND STOVE CO.,

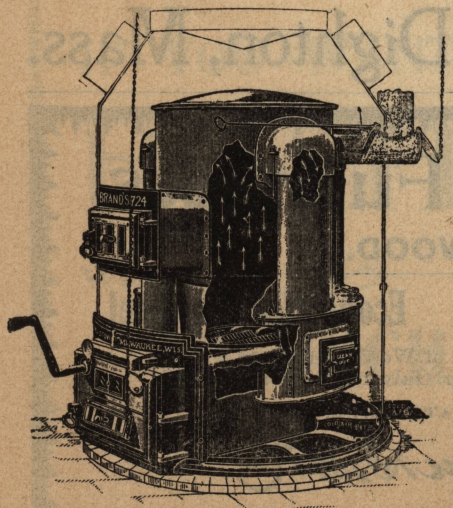


Brand's Magnet Wood Furnace.

Portable Form.
Three Clean-Out Doors, four inches diameter, on each.
Radiator made of 14 Gauge Steel.

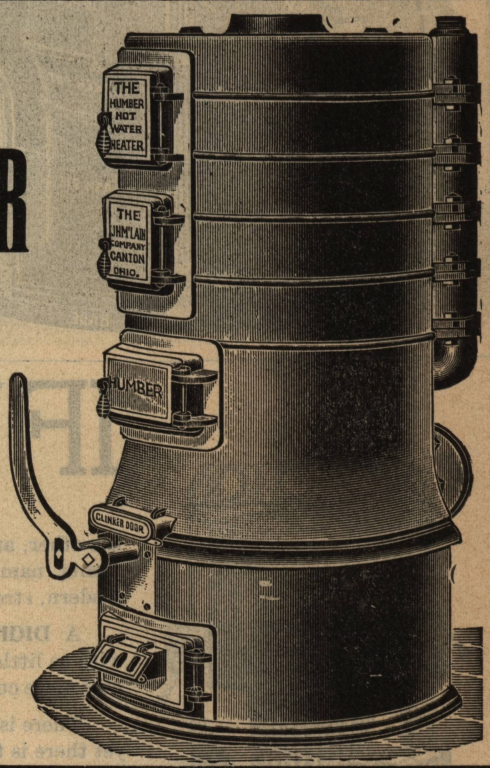
Brand's Steel Dome Base Heating Furnace.

For Hard or Soft Coal.
Three sizes.
Portable and Brick Set Form.



MILWAUKEE, WIS.

HUMBER HOT WATER HEATER.



Capacities ranging from 200 to 2700 square feet in addition to mains.

Prices are very low. Send for general catalogue and price-list.

THE J. H. McLAIN COMPANY,
CANTON, O.

New York—83 Center Street.
Boston—100 Pearl Street.
Chicago—36 Clark Street.

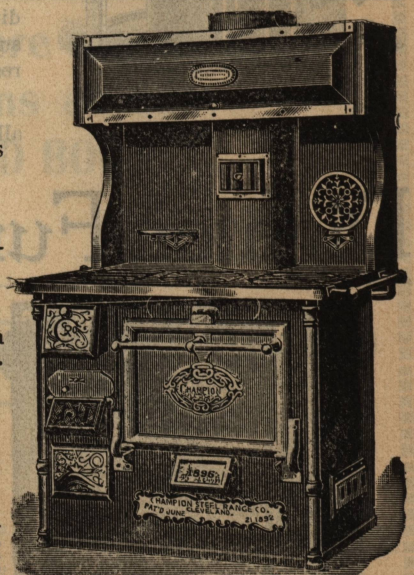
Champion and Marquart Steel Ranges

Are beyond all doubt the best goods offered the trade.

They Commend Themselves
to Dealers because they are the Best Sellers Made.

They Commend Themselves
to all Students of Economic Cooking on account of their Double Flue Construction.

Why not write and secure the agency for these goods?



Champion Steel Range Co.,

131-137 VIADUCT, - CLEVELAND, O.

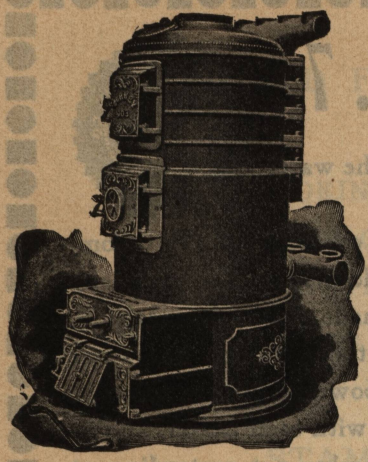
AGENCIES: Rumsey & Sikemier Co., St. Louis, Mo.; Corbett, Failing & Robinson, Portland, Ore.; Lee, Glass, Andreesen Hdw. Co., Omaha, Neb.; A. L. Piper, Rec. Z. C. Miles Co., Seattle, Wash.; Chicago Stove & Range Co., Chicago, Ill.

MICA

EUGENE MUNSELL & CO.
MINERS & IMPORTERS.
NEW YORK. 218 WATER ST.
CHICAGO. 117 & 119 LAKE ST.

1900. **GURNEY** 1900.

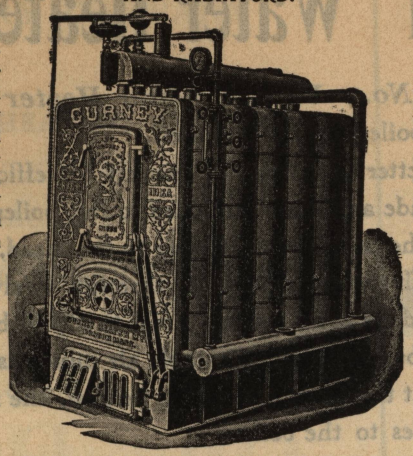
HOT WATER HEATERS, STEAM BOILERS AND RADIATORS.



"400 Series" Hot Water Heater.

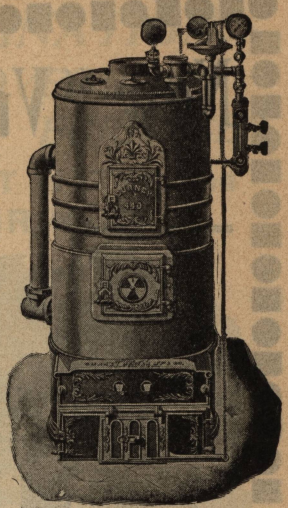
The "400 Series," both for Hot Water and Steam, embody the best and most up-to-date features, are thoroughly tested, and can be relied upon for **DURABILITY, EFFICIENCY and ECONOMY IN FUEL.**

Send for Latest Jan. 1st Price-List with Discounts.



Bright Idea Safety Water Tube Steam Boiler

The Bright Idea, for larger work, or where Power is wanted, is capable of meeting every requirement and is without a peer. Unrivalled for **COMPACTNESS, SIMPLICITY and ECONOMY IN OPERATION.**



"400 Series" Steam Boiler.

Sold only through the Trade.

NEW YORK BRANCH:
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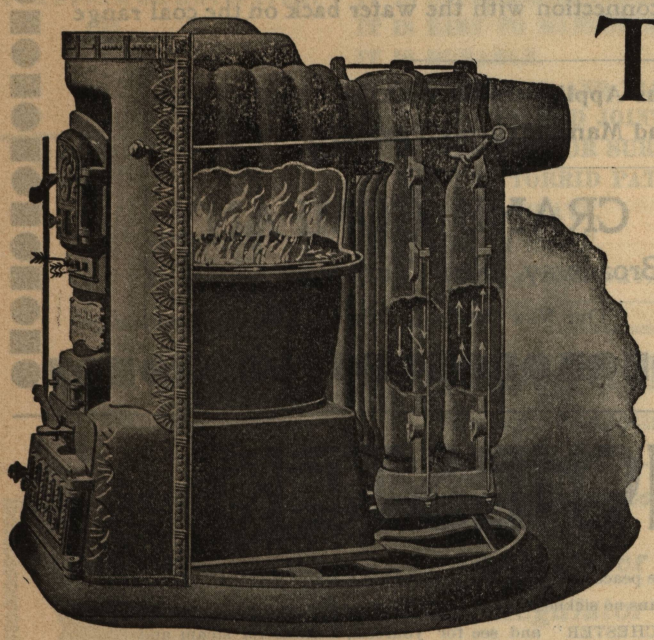

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HOT AIR FURNACE.

SMALL IN SIZE—
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THE BENGAL gives entire satisfaction wherever used. Has many advantages possessed by no other heater. A TRADE WINNER.

CLEMENT & BROWN MFG. COMPANY.

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Gentlemen: In regard to the Bengal Furnace, we are pleased to say we consider it one of the best furnaces we ever set.

Yours truly,
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Get the THATCHER FURNACE. Construction first-class in every way. Prices to meet all competition.

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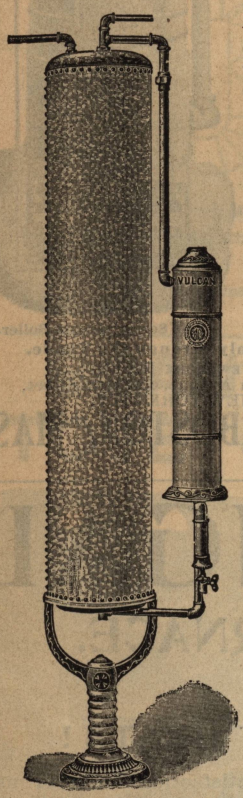
New "Vulcan" Water Heater No. 7.



The *No. 7 Vulcan Water Heater* will heat the water in house boilers up to 40 gallons.

No better heater on the market for efficiency and economy of gas. Compactly made and easily attached to the boiler. The cold water inlet passes up through the center of the heater to the head, which is made of solid *brass* casting, from which the water is forced through twelve ¼ inch tubes, to the hot water outlet inside of brass casting direct to top of boiler. A powerful burner, using 35 feet per hour, with an adjustable air mixer, is furnished with each heater, and so placed that the space occupied is *vertical*, the mixing chamber not protruding at right angles to the boiler.

Tubes can easily be cleaned and sediment removed, a plug being attached to each pair of tubes.

Heater is lined with asbestos to prevent loss of heat.

This heater can be used in connection with the water back on the coal range if desired.

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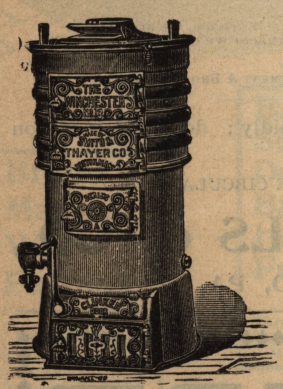

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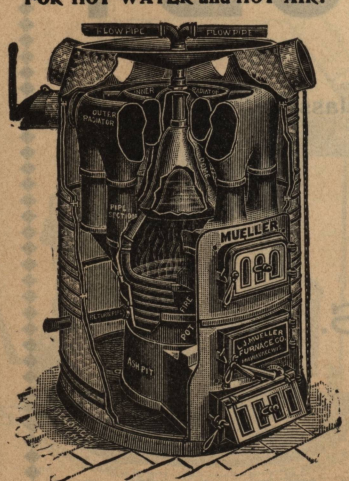

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COMBINATION HEATERS,

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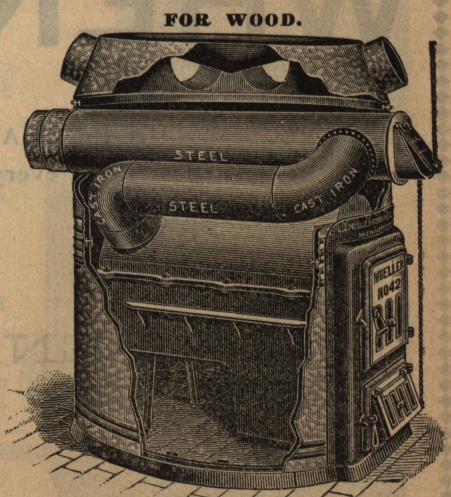

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HOT-AIR AND COMBINATION AIR AND
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LAUNDRY STOVES CONFECTIONERS' STOVES
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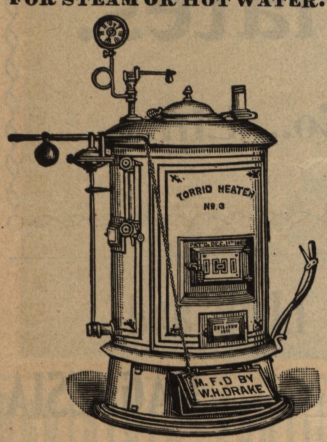
STAMFORD CONN

"TORRID" HEATER.
FOR STEAM OR HOT WATER.



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IT IS EASY TO MANAGE AND KEEP CLEAN.
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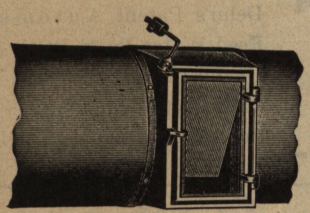

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Asbestos Lined,
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STOVES and
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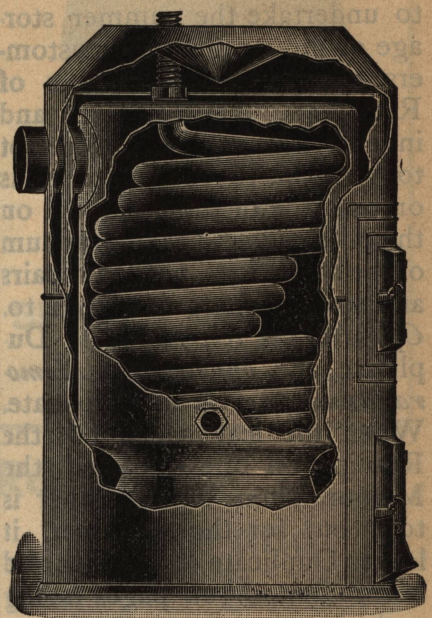

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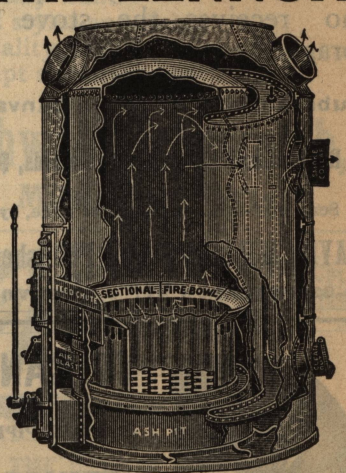

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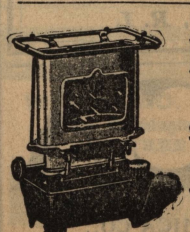

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This arrangement has the advantage of bringing the two Receipt pages and the two Memorandum pages opposite each other, before the customer's Receipt is removed, facilitating copying and comparison, so that the Receipt and Memorandum given to the customer may *exactly correspond* with that retained by the person who receives the stove for storage.

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100 Receipts and 100 Duplicate Records, $1.00.

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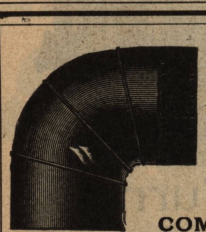

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A COMPLETE LINE.

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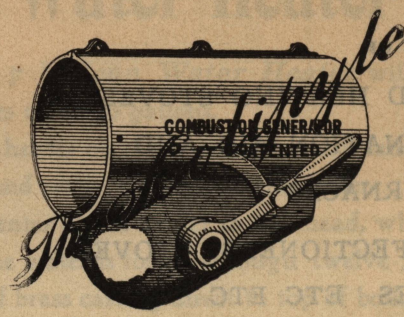

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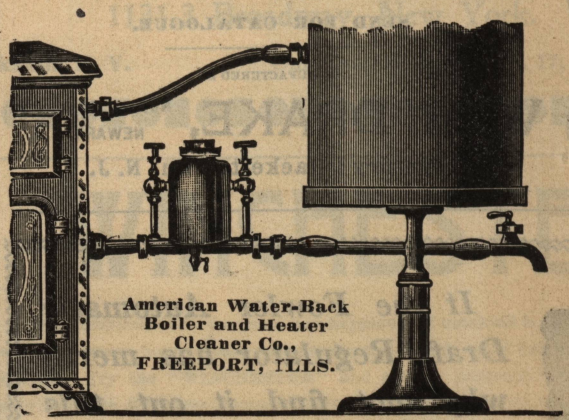

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accumulating in Water Backs, Heaters, Coils, Furnaces, etc., can be overcome by using Dehn's Patent Automatic Feed Water-Back Boiler and Heater Cleaners.

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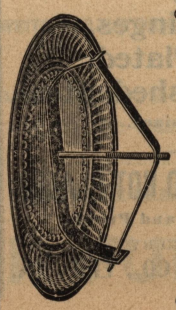

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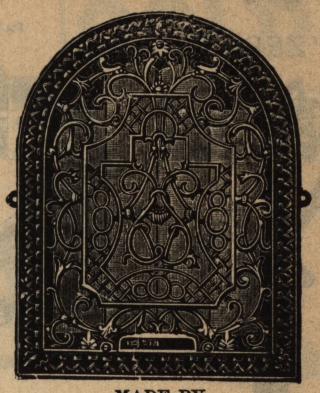

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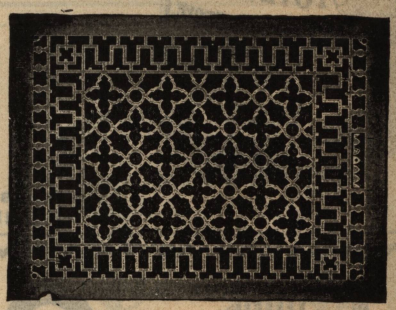

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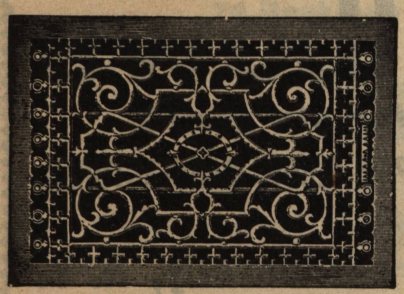

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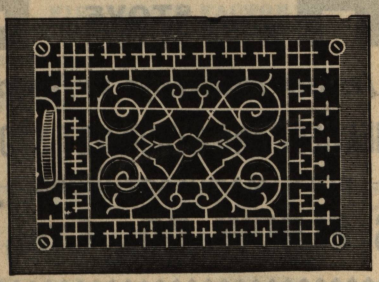

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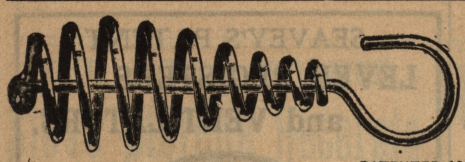

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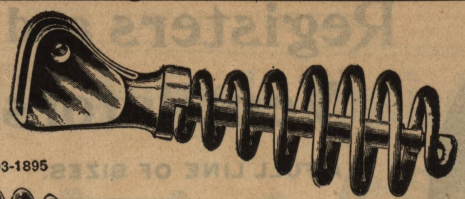

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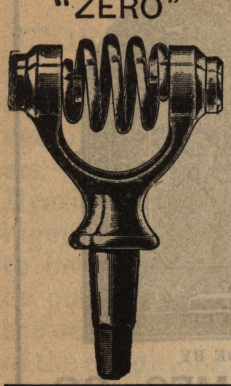

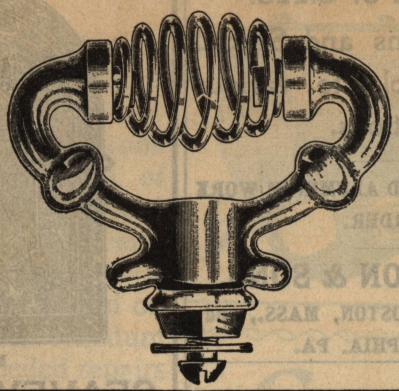

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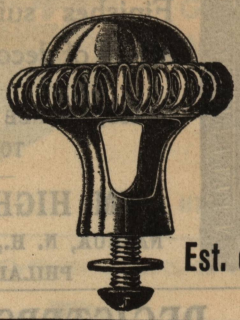

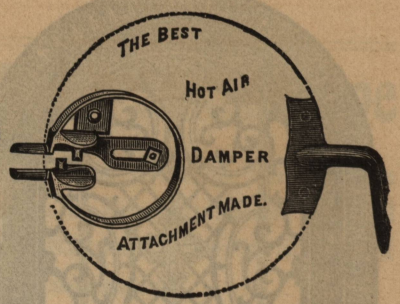

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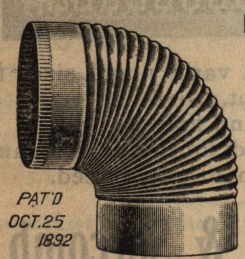

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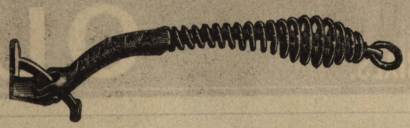

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Knobs, Handles, Pokers, Lid Lifters, Shovels, Fire Sets, Etc.

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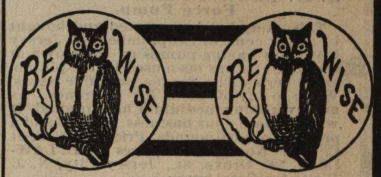

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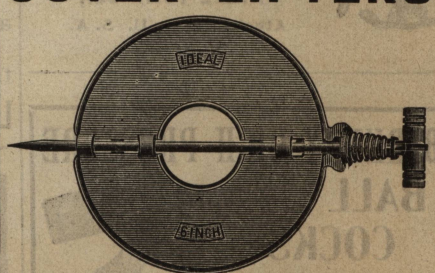

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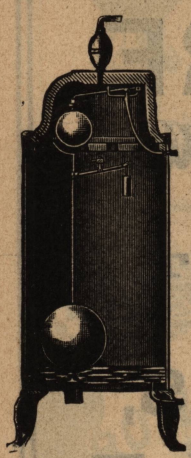

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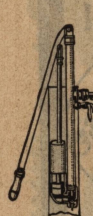

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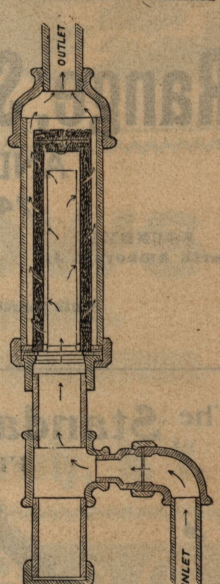

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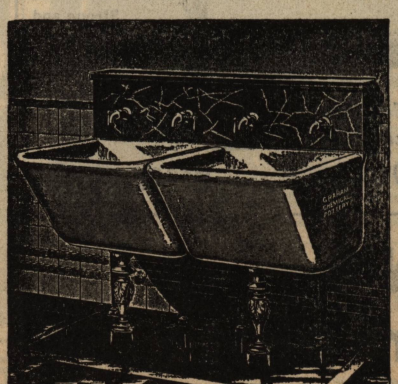

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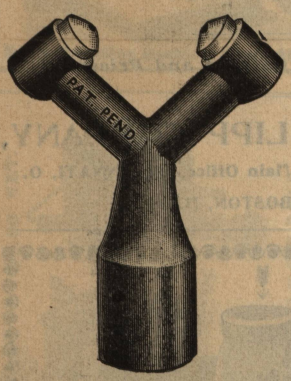

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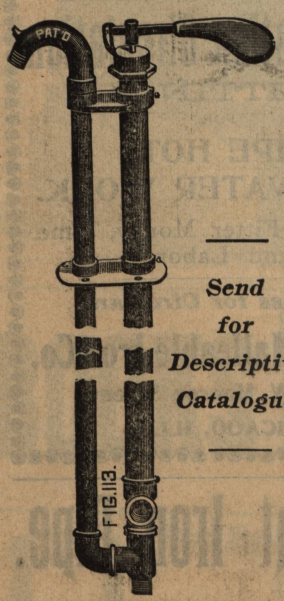

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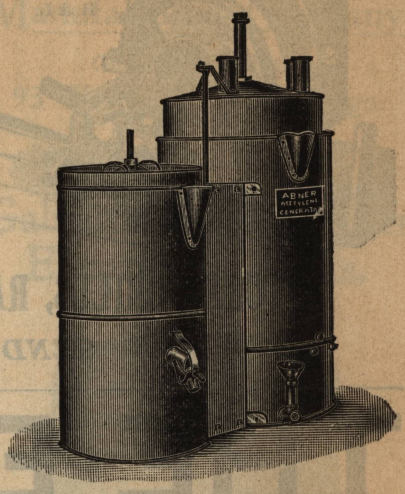

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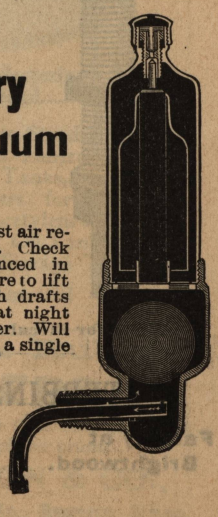

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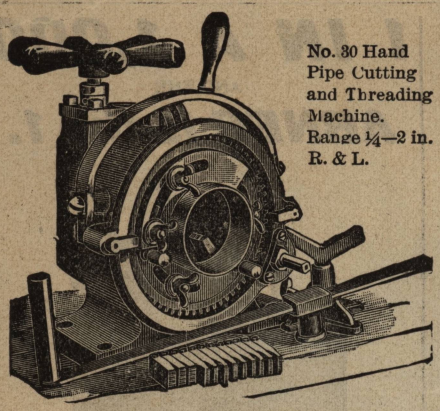

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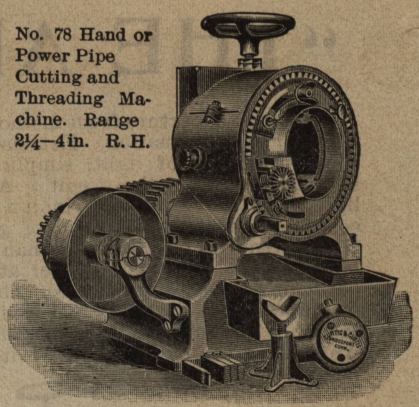

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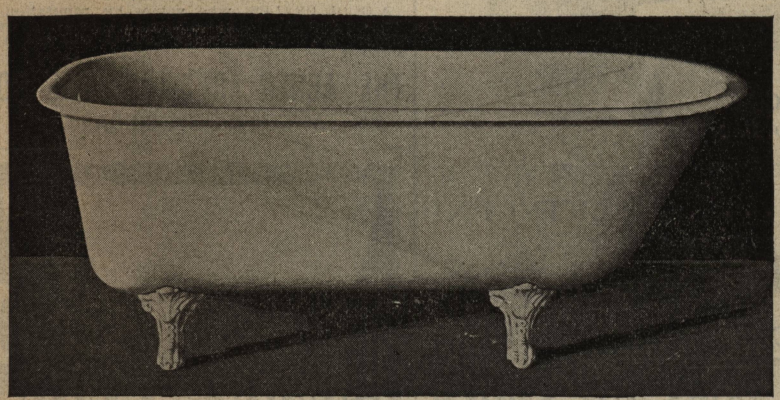

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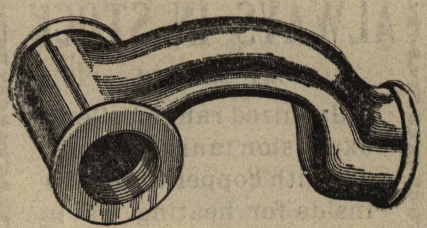

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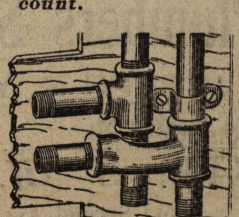

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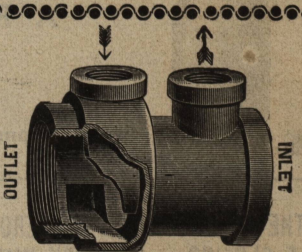

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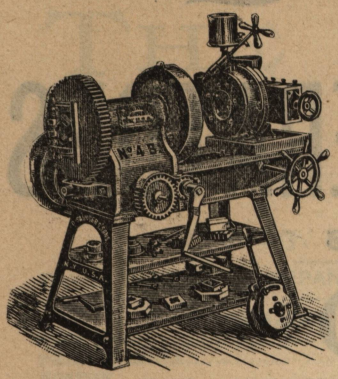

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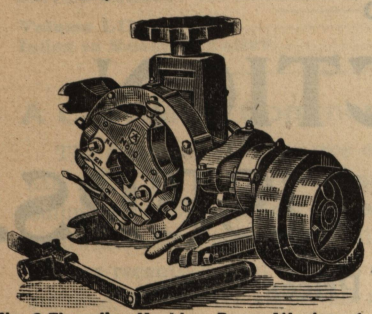

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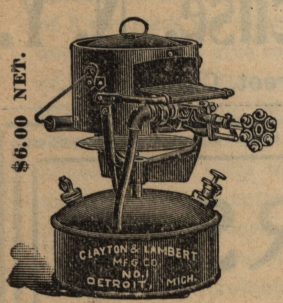

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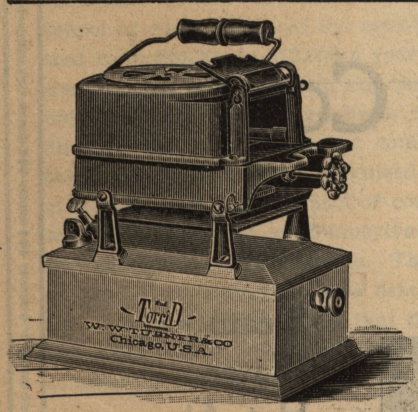

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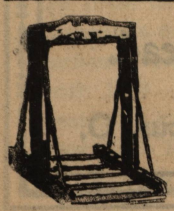

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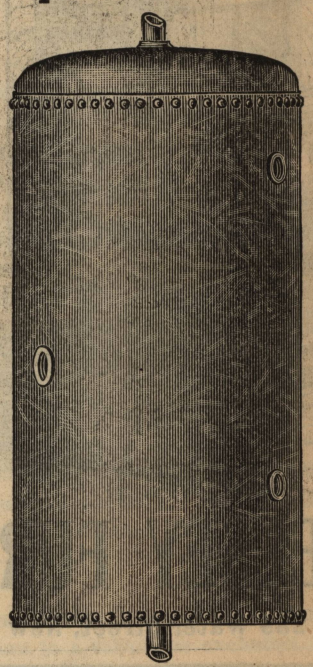
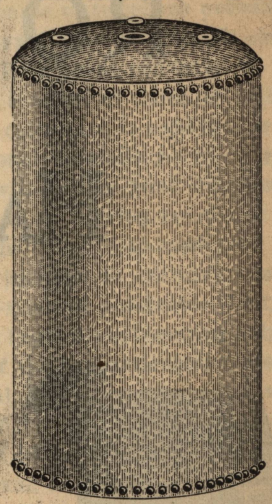


Galvanized Iron Braziers' Tanks.



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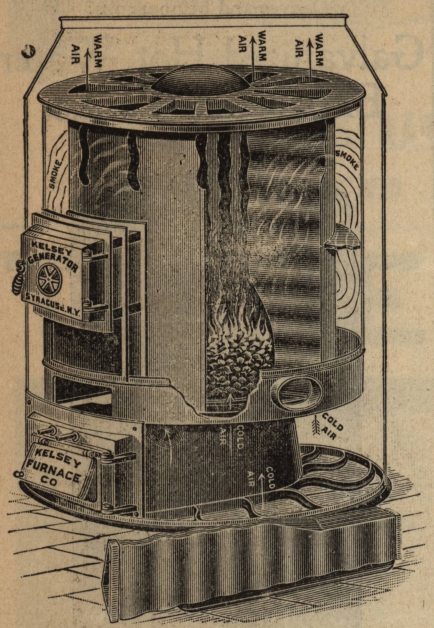

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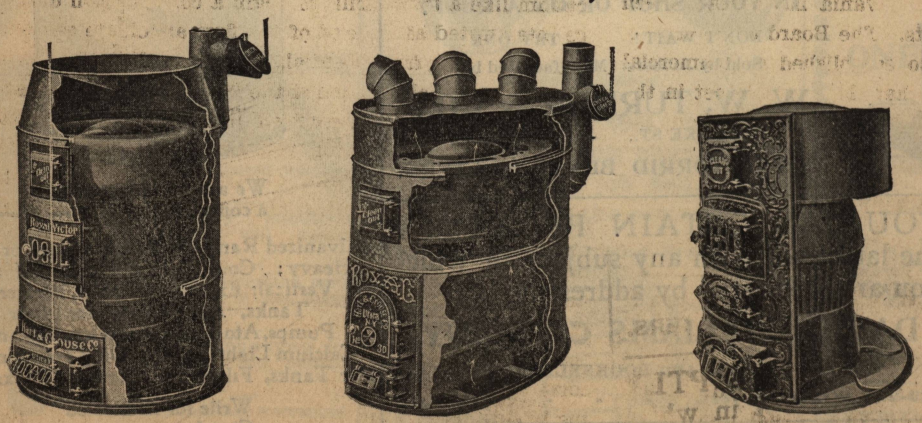

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A College of Commerce.

The Chamber of Commerce of the City of New York has taken the first steps toward the establishment in Columbia University of a school of commerce, with an endowment of at least half a million dollars. The Chamber has recently raised the sum of $1,000,000 for its new building, and nearly all of this money has been paid in. Each subscriber to this fund will receive scrip to the amount of his subscription, bearing interest at the rate of 3 per cent. per annum. It is now proposed that each subscriber shall give to Columbia University at least half of his scrip for the establishment of the projected college of commerce. Morris K. Jesup, president of the Chamber, has already announced that he will turn over $25,000 of his scrip to the university for this purpose, and no doubt is entertained that the required amount will be readily forthcoming. The $500,000 building scrip will yield a revenue of $15,000 per annum. President Low of Columbia University, in pleading for the assistance of the Chamber in the establishment of a school of commerce, told the members about a year ago that from $10,000 to $12,000 a year would be required to conduct such a department, and that with $20,000 a year both a collegiate and graduate course could be conducted. The need of higher commercial education of this kind has long been recognized by the business men of this country, and a school of commerce in connection with the University of Pennsylvania has already been started with promising results. The Board of Education of New York City have also established a commercial high school, and it is hoped that the example set in the two cities named will be widely followed throughout the country.

New York's Fire Waste.

In the annual report of the Fire Marshal of New York City on fire losses in the boroughs of Manhattan and the Bronx during the year 1899, special attention is called to the dangerous risks incurred through the use of swinging gas jets and of gas and lamp brackets placed in too close proximity to curtains or other draperies. To these causes, together with an unusual number of suspicious fires, the Fire Marshal attributes largely the serious increase in the fire losses of last year as compared with 1898. No less than 5393 fires, or an average of nearly 15 a day, were brought to the attention of the New York Fire Department in 1899, as against 4239 in the previous twelve months. This increase in the actual number of fires was large enough to be serious, but the increase in the value of property destroyed was still more deplorable, rising from $4,155,191 in 1898 to $7,458,840 in 1899. It seems strange that with all the modern improvements that have been introduced in fire fighting methods and appliances, the fire waste in a city like New York, provided, as it is, with one of the most efficient fire departments in the world, should show such a tremendous increase. As a partial check to this waste, the Fire Marshal recommends legislation for the prohibition of swinging gas jets and the rigid inspection of gas and lamps, so as to prevent their location near inflammable hangings. He also advises that more care should be exercised by insurance companies in the acceptance of risks where the slightest suspicion of moral hazard exists. The number of suspicious cases has been increasing rapidly of late years, and it is intimated that the laxity of insurance companies, who in their eagerness for business accept risks too readily, is responsible for a serious growth of incendiarism. Whether this be a fact or no, the situation in New York City is evidently one that calls for earnest consideration by both the municipal authorities and the insurance corporations.

Hello, Central!

A news telegram from Chicago a few days ago reported that a young woman in a telephone exchange in that city was rendered insensible by a shock which destroyed her nervous system. It is not very clear how it happened, but the wonder is that the young women who preside at the switchboards of telephone exchanges are not much oftener paralyzed than the records show. The telephone is undoubtedly a great convenience, but like all conveniences it has a habit, at times, of getting things tangled up in a way calculated to exhaust the resources of even an exceptional vocabulary. To ring up a customer or some one with whom your business is exigent, get the connection after hearing for ten or fifteen minutes that his wire is "busy;" to have your left ear stunned and rendered immune to ordinary sounds by an indescribable br-r-r-r-r which penetrates the tympanum like a twist drill; to begin a conversation only to be interrupted at the end of the first articulate sentence by the inquiry from Central, "Are you through?" with an irritating prolongation of the last syllable o-o-o-o, and a rising inflection; to be cut off just when the conversation is getting interesting, and hear a nascent widower dicker with an undertaker about the price of caskets, or a housekeeper order her day's marketing; to ring off, connect again with the wrong man, and so consume half an hour in the busiest part of the day, without getting anywhere, is a not unusual telephonic experience. Once in a while a man of equable temper can whisper into the ear of Central "My dear young lady, I am sincerely sorry to give you so much trouble, but if you could oblige me by giving me four, four, eight, eleven, Cortlandt, just for a minute, you would win my lifelong gratitude"—or something to that effect. But as the rule what Central really hears, if she listens, is calculated to knock a sensitive and highly organized young woman off her chair and necessitate an ambulance call. We do not know whether anything like this happened in Chicago,

but it might very well happen anywhere. The voltage of the current which normally plays around the switchboard is not high enough to do any harm, but the voltage of such an outburst of paroxysmal and cyclonic profanity as the telephone sometimes invites is great enough to accomplish almost anything in the way of paralyzing the nerve centers of an unseasoned "Central."

Doing Business Without Accounts.

The death of a locally well-known and successful business man in a Western city, which occurred quite recently, necessitated an adjustment of the interest of his heirs in the business of the firm of which he was an equal partner with another. This disclosed the fact that, for thirty years, the firm had kept no account books of any kind. It had done a strictly cash business and the partners divided each day's receipts every night before locking up, share and share alike. When a bill was received for goods purchased each partner pulled out his wallet and contributed one-half the sum needed. In this way they had gone on for more than a quarter of a century—making money, paying their debts, sleeping soundly at night, no doubt, and probably feeling very sorry for their less fortunate neighbors who could not make it go. The incident is extremely interesting, but it is instructive only as showing that where perfect good faith and confidence exist between those associated in business contracts are unnecessary and account books superfluous. Unfortunately the basis for such a relation does not always exist between partners, and the truth expressed in the homely proverb that "good fences make good neighbors" applies equally in business alliances. As to the dispensing with books of account, the conditions under which that would be quite safe, though unusual, are much more frequent in business than might be supposed. We have known of a good many fortunes built up in just that way. One of the richest and most successful contractors and operators in franchises we know of can neither read nor write, keeps no books, never sends a letter, and if he receives one has to have it read to him. But he has a good memory, attends strictly to business, makes very few mistakes and is a multimillionaire. The basis of every success so attained is—originally, at least—the cash basis, and once established this is rarely widely departed from. To buy for cash—discreetly, of course—is to leave the buyer room for a profit if he sells at the credit buyer's net cost. To sell for cash is to save a profit on the credit seller's interest charges and losses from bad debts. It is not the modern method, of course. It does not offer the road to quick fortune, but it has the incidental advantage of not offering any short cut to bankruptcy. If more of those starting in business would make the attainment and maintenance of the cash basis their objective point, and would confine their operations within the safe limits of their capital, however small this may be, assignments would be infrequent and the proportion of satisfactory business successes would be much larger than statistics now show it to be.

The building trades strike in Chicago is evidently reaching an acute stage, so far as a large number of the workmen are concerned. President Carroll of the Building Trades Council estimates that one thousand workmen are in actual want, and that, with their families, some 4500 persons are actually suffering for lack of the necessities of life. In other words, starvation has become a factor in the situation. The labor leaders are now busy making plans for relief on a large scale, and have sent committees to other cities to raise funds for the support of the victims of the strike. Still there is no sign of a conciliatory attitude on the part either of the employers or the employed.

Probably no more convincing proof of the general prosperity of the country can be presented than the increased deposits of the working classes in the savings-banks at the large centers of business and population. Savings bank officials generally report that the increase in the number of depositors and in the aggregate of deposits this year has been remarkably large; in many cases the heaviest in the history of their institutions. The new customers, they add, come mostly from among the wage earning class.

A novel business in London is that of dealer in second-hand plate glass. Large plates of glass are insured when placed in a window, and when any of them are broken the owner of the injured glass usually prefers that the insurance company should replace the broken plate, rather than pay its value. The insurance companies dispose of the injured plates to dealers in second-hand plate glass, who utilize what remains of the unbroken plate, cutting it into panes of smaller size and disposing of them to various firms.

"Porto Rico" is the way in which the name of our West Indian island possession is to be spelled, the Secretary of War having issued a general order, saying that in accordance with the provisions of the act for a civil government for Porto Rico, which so fixed the spelling of that island, the military department there will hereafter be referred to in all official correspondence, orders, &c., as the "Department of Porto Rico."

The Situation in the Iron Trade.

The reduction of $18 to $20 a ton on wire and wire nails made during the past week has startled the trade, as such a radical drop in prices had not been expected. It has caused a serious check in business in other branches of the iron and steel trades, as buyers will wait to see what effect this will have on raw materials and manufactured products generally. This is believed to have been the largest horizontal reduction in price in the history of the iron trade. Its nearest parallel is the reduction in the price of steel rails which was made in February, 1897, and for the time caused as great a sensation. The effect of this occurrence is shown in reports from the different trade centers, which indicate that in some lines it is at present almost impossible to make quotations owing to the cessation of business. It will probably be a couple of weeks until the smoke clears away and all parties are able to get their bearings. In the meantime it is well for everybody to bear in mind that the condition of the country generally is of the most satisfactory character. Prosperity reigns in all branches of business, railroads are doing an enormous traffic, workmen are well employed, the prospects for crops are of the most encouraging character, and our foreign trade is not only unprecedentedly large but continues to grow. Foreign iron markets are buoyant, and we have every reason to expect that our exports of manufactured products will continue to increase. Sales of Southern pig iron for export have been large during the week, and the indications point to much more business of this character. Should iron and steel prices generally settle to a level somewhat lower than recent figures, that will not be a serious matter. Manufacturers will be able to bear a reduction and still make a fair profit. No fear is felt of a return for a long time to anything like the low level of prices ruling in 1898. More moderate prices will greatly increase the demand for iron and steel.—*The Iron Age.*

Stove Plant for Sale.

The well-known and extensive stove manufacturing plant of the Somersworth Machine Company at Salmon Falls, N. H., on the Western and Northern Divisions of the Boston & Maine Railroad, will be offered for sale at public auction on the premises on Saturday, May 12, at 12 o'clock, noon. This plant has been in operation since 1848, manufacturing heating and cooking stoves, furnaces, sinks, hollow ware and all castings pertaining to the trade. It has put upon the market over 60 different patterns of stoves which are well known to the New England trade. The factory is equipped with an electric light system and a nickel plating plant. The property, which is in excellent condition and has conducted a profitable manufacturing business, consists of 22 buildings and 40 acres of land and eight tenement houses with 14 tenements. A descriptive catalogue of the buildings, also illustrated trade catalogue of manufactured goods, will be mailed on application by B. Frank Nealley, assignee, Dover, N. H. The real estate, patterns and tools and good will of the business will be offered for sale. Terms, $1000 down at the time of sale and the balance of purchase money when the title of the property is given.

Some Fine Oil, Gas and Gasoline Stoves.

Those who handle stoves using gas, oil or gasoline for fuel will find a visit to the showroom of John P. Ley, 239 Water street, New York, of special interest at this time, as he has just completed the arrangement of his display of summer cooking goods. The Twin Burner and the Quick Meal lines are both shown. The Twin Burner stoves of the junior type are this year made with a substantial cabinet base that adds greatly to their attractiveness. The large two and three burner stoves are shown with step and with portable ovens and also in full cabinet finish, having a warming closet as well as a baking and broiling oven. These stoves also have high shelves with nickel plated tea pot shelves.

The Quick Meal line has its special attractions and is made in the cabinet form with high shelves, warming closets, ovens and nickel trimmings, for both oil and gasoline.

Another line of special attraction is the Quick Meal gas stoves and combination coal and gas ranges. The gas stoves are very complete and receive much attention, but two of the combination ranges are of special interest. One is a complete coal range with the gas range on the opposite side of the fire, giving it somewhat the appearance of a double oven range. The other has the gas cooking burners hinged so as to let down on the top of the coal range for use, and has the oven and broiler above. Both have a gas water heater that is designed for use in connection with the water back and boiler. These ranges give a double water heating and a double cooking capacity for emergency and an apparatus suited to the seasons. They have been well received by the trade, and a number have been sold for fine apartment houses. While the prominent place in the display is given to the summer goods, there is also an attractive line of coal stoves and ranges exhibited.

Charter Oak Hotel Steel Ranges.

Backed by a manufacturing record of 50 years, each one of which has been devoted to the advancement and improvement of their line of stoves and ranges, the Charter Oak Stove & Range Company, St. Louis, Mo., now place upon the market a high class steel range for hotels, club houses and restaurants. They say that this new line is the heaviest made. No castings are less than ¼ inch thick, and especial care has been taken to make the fire box linings extra heavy. The fire backs are sectional and held in place by heavy cast plates. Water backs are tested to 200 pounds pressure. Loose, extra heavy grate bars are used, this style having been recommended by users generally. The feed door is so constructed that even if a crow bar is used to poke the fire no part can be broken. The bodies are made of No. 10 gauge steel, lined with ¼-inch asbestos, held in place by No. 16 gauge steel lining riveted through. These ranges have flue between oven and fire box; the flues are extra large, as required, and of special design. Unusual strength has been given to the oven door, which is steel framed, and a particularly attractive feature lies in the solid brass hinges, corner pieces and handles. The company have made a number of desirable installations, and one in point is an equipment for the new home of the St. Louis Club. This particular range has three fires, three ovens, each 30 inches long by 23 inches deep by 17½ inches high, and broiler.

THE THREE TRAVELERS.

A FABLE.

BY THE ORDER CLERK.

Two Travelers descended on a certain town one day, each selling merchandise designed to transform the most frigid temperature into the torrid zone, with ordinary attention and proper size and quality of fuel. They did not bring their merchandise with them, because of the great weight, but sold c.o.d., f.o.b., 60 days, a.o.t., or otherwise, as they saw good in their own eyes to do.

The younger and more alert of the two waited not by the wayside to remove the cinders from his locks, but made straightway to the warehouse wherein the only dealer in the town bought and sold. Drawing him aside he said unto him:

"Behold I show you a wood cut of the only thing on earth, without which you cannot prosper in your business. There are others, but compared to this, they are as sounding brass or a tinkling cymbal, to say nothing of mighty poor cast iron."

He further sought to warn the Dealer of the grave defects to be found in the merchandise of the man who was yet to come, and by inference and innuendo set the character of his adversary in an evil light. The Dealer, being a just man, was filled with uncertainty, and stroking his beard, dismissed the traveler, saying, "I'll see."

In the course of an hour the second traveler appeared and he was like unto the first, in that he straightway proceeded on the same lines.

The Dealer was thus left in doubt as to which was good and which was evil, and furthermore was piqued, owing to his judgment being laid aside, but like a wise man, deferred decision until he had consulted the authorities. He again stroked his beard, and likewise dismissed the second traveler, saying, "I'll see."

And lo, as he pondered these things in the same hour there came a third traveler, of modest mien, whose brow extended far back, likewise his experience, who, on being questioned concerning the other two, spake as follows:

"The merchandise of these two men is above reproach, and collectively and individually they are jolly good fellows, but speaking of trade, have I not here the thing you want, as is shown by these cuts? I leave it to your own judgment if it is not so."

The Dealer saw and was convinced, and straightway fell on the third traveler's neck, saying:

"You are my size and capacity and the direct draft. When sojourning in this neighborhood call again." He thereupon signed an order for two.

And the third traveler journeyed ere sunset to the next town and again was in time.

Moral: To scare a bird is not the way to catch him.

R. W. Hillman, the manager of the New York office of the Barstow Stove Company, Providence, R. I., is a National Guardsman, and was called out to preserve order at the Croton Dam strike. He has doffed his uniform, and his next campaign will be with the Bay State line of Stoves and Ranges.

Meeting of the New York Stove Association.

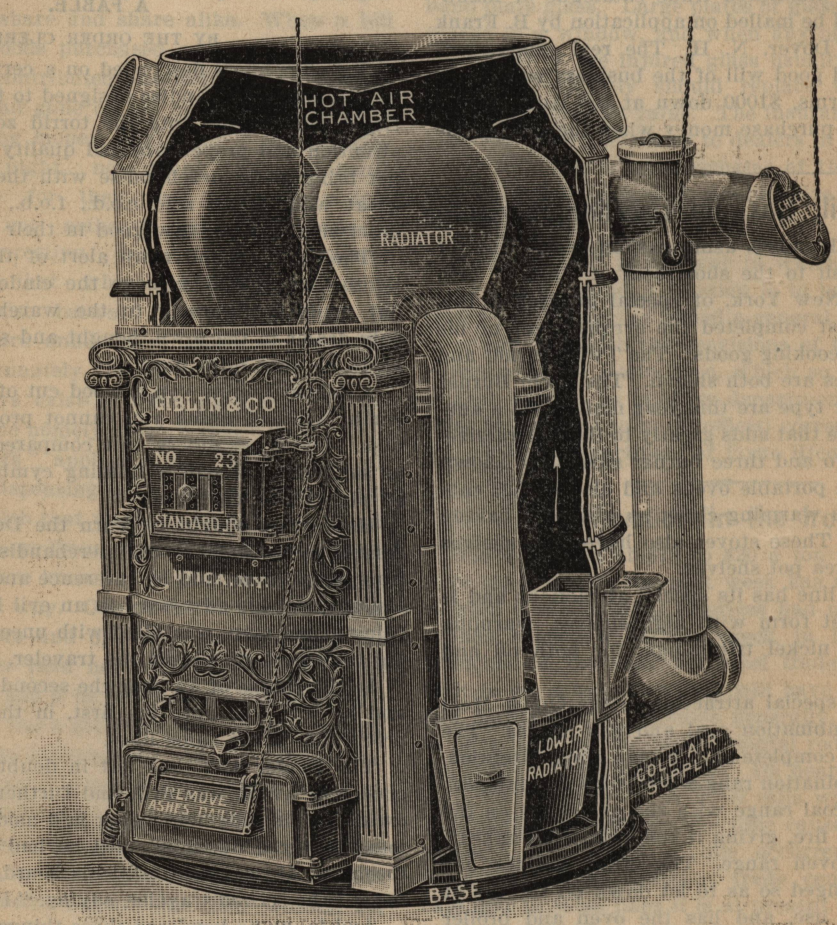
A call has been issued for a meeting of the New York City Stove, Range and Furnace Manufacturers' Association, to be held at 11.30 a.m., May 1, at the Astor House.

A certain matter that was the subject of considerable discussion at the last meeting will be taken up, a report of the Executive Committee having been prepared. While it is not so stated, we presume the entertainment of the National Association, whose convention will begin a week later, will also come up for consideration.

The Standard, Jr., Furnace.

In the accompanying illustration we show a broken view of the Standard, Jr., hot air furnace, made by Giblin & Co., Utica, N. Y., which has recently been substantially improved by the substitution of a V-shaped cast iron horseshoe radiator for the steel radiator heretofore used. This radiator is placed at the lowest point in the furnace surrounding the ash pit, so that the cold air supply entering the furnace first comes into contact with its surfaces and is warmed before it passes on to the fire pot and hotter surfaces of the furnace, thus enabling the furnace to utilize the fuel to a greater extent.

It also accomplishes a part of the work by thus tempering the air so that the upper and customary heating surfaces have their efficiency increased, and the furnace is capable of heating a larger volume of air and bringing it to the hot air pipes at a high temperature. Being made of cast iron greater durability is claimed for the new radiator. It is provided with cleanouts, so that soot and ashes can be removed readily. While the furnace is somewhat higher in price, owing to this improvement, the house report that the sales of this furnace have increased. The house have in course of preparation a new catalogue of their heating goods that will soon be issued.



The Standard, Jr., Furnace.

The Toledo Stove Company

of Toledo, Ohio, have just issued from the press an attractive catalogue of 88 pages bound in colored paper covers and relating to the leading lines of Gem stoves and ranges which they manufacture. The leading feature of the publication is found in the illustrations and description of the company's new square oven line of goods, which is referred to as entirely different from any other heretofore placed upon the market. The new line is offered both in japanned black and planished steel bodies, with all modern improvements. The oven top is all cast iron and ventilated through the center; the oven door is balanced by springs attached to the outside, so that the heat of the oven will not adversely affect them; the oven door has two thicknesses of steel with an air chamber of ⅝ inch between them, while the fire box is so constructed that the grate and grate frame can be taken out through the front without interfering with the linings. The range is offered under the name Banner Gem, and is made in a variety of styles and sizes, several of which are illustrated in the catalogue under review. Another interesting construction is the Grand Gem, a medium price range of handsome exterior, while other goods shown include the Excelsior Gem, a four-hole cook stove; the Brilliant Gem, a six-hole coal or wood range; the Maplewood Gem, a six-hole wood range; the Oakwood Gem, a member of the same class; the Woodbine Gem, a four-hole wood cook, and the Royal Gem, a six-hole range for hard coal, soft coal or wood. The company announce that they have added a new line of low priced cook stoves to their already extensive assortment, and offer the same under the name of Perfect Gem. Among the parlor stoves, mention may be made of the Standard Gem, a new double heater; the Glen Oak, an attractive construction, with wood or coal grate; the Oakdale, made for either wood or soft coal, and the Globe Gem, for hard or soft coal.

ENTERTAINMENT AT THE STOVE CONVENTION.

We learn that the New York stove men have not been idle in making arrangements for the entertainment of the delegates to the convention of the National Association of Stove manufacturers, to be held in this city May 9 and 10, and that the committee having the matter in charge have outlined the form of entertainment, and the preliminary arrangements have been completed. The committee of seven, some of whom are members of the New York City Stove, Range and Furnace Manufacturers' Association, will have plenty to do while the delegates are in the city and the convention is in progress.

While it is somewhat premature to give the formal programme, we understand that the entertainment will probably include a "smoker" one evening and a theater party another evening. From the reputation for hospitality established by the local stove men when the national convention was held in this city some years ago, we have no doubt that the attending delegates at the present convention will have every reason to feel that that reputation has been fully sustained.

The committee, with one member yet to be added, now stands as follows: P. B. Acker, Eugene Munsell, Henry T. Richardson, A. L. Canfield, Franklin L. Sheppard and Edward Bowditch.

An Opinion on the Furnace Trade Outlook.

We present the following extract from a letter from an Ohio furnace manufacturer relative to the competition and the outlook in the furnace trade in the territory covered by his house:

It is my belief that competition is as sharp now as in the past. In fact, I think there are more concerns represented in this territory than ever before; however, there is a tendency to advance prices. This advance is not caused by organization (as that is something we are not blessed with), but is, I think, the result of a number of irresponsible dealers having been forced out of business by hard times that existed a few years back. Responsible dealers always ask fair prices. As to the outlook for business, that, I think, is good. Architects tell me that prospects are better now than at any time since 1892.

The Pittsburgh Stove & Range Company.

The Pittsburgh Stove & Range Company, Pittsburgh, are getting ready for the market six complete lines of steel ranges under the trade-marks of Cinderella, Good Luck, Tremont, Triumph, Grafton and Etna. This line of steel ranges will be made with a full complement of high shelves and high closets, special attention being paid to mechanical features with a view of securing greater durability. Artistic features have not been overlooked, and each line will have separate and distinct ornamentation and design. It is expected to have this line of ranges ready for the trade about August 1. The Pittsburgh Stove & Range Company have also in preparation a cheap but very attractive line of ranges for natural gas and artificial gas, which they expect to have ready about July 1. While these ranges will be low in price, they will be high in quality and attractive in design.

The sales department of the Pittsburgh Stove & Range Company, in charge of Chas. W. Goodnough, has been removed from the second floor to the third floor of the large building occupied by the concern on Wood street, Pittsburgh. More light and room have been secured, and the sales department is now exceedingly attractive in appearance. The Pittsburgh Stove & Range Company regard the outlook for trade this year as exceedingly bright, and with the new lines of goods which they will have they confidently expect to do a very large business.

ODD PLATES.

FRONT RANK STEEL FURNACE COMPANY, St. Louis, say they hear more or less about comparatively quiet business conditions just now, but further state their Furnace sales exceed those of last year at this period. They are now inclosing the Front Rank Wood Burning Furnaces with a portable or galvanized sheet metal casing, which will make quite a reduction in the cost of their installation. It is claimed that a brick set casing will cost fully twice as much as a portable jacket, and with no better results.

WITH the coming of the season when the windows are opened and the festive zephyrs play havoc with the papers on the desk of the business man, J. M. Litchfield, Beekman and Pearl streets, New York, establishes himself in the good graces of his friends by presenting them with a handsome nickel plated paper weight. It bears the mark of the Mt. Penn line of Stoves and Ranges.

THE STOVE FOUNDRY of F. A. Klaine & Co., Cincinnati, Ohio, was shut down for a few days in order to make necessary repairs and taking inventory.

THE ECLIPSE STOVE COMPANY of Mansfield, Ohio, send us a copy of the third issue of their paper for Stove men, entitled "The Eclipse Light." While its four pages carry more or less matter of a general nature, the major portion of this space is given up to remarks concerning the goods made by the company named. On one page there are illustrations of the Triumph Eclipse Steel Ranges, the Challenge Eclipse, for coal and wood, and the Mars Eclipse Oak, the latter being an attractive heater, made in five sizes. On one page reference is made to the Peerless Eclipse Coal or Wood Oak Stove, and on the fourth page are views of the new "D" series of the Triumph Eclipse Steel Range. We understand that the last named Stove has been on the market only a short time, but has proven very popular wherever its merits have become known. A member of the editorial staff of the "Eclipse Light" is George W. Robinson, the sales manager of the company, and he will start in a few days on an extended trip through the West, visiting the Eclipse agencies in Omaha, Denver, Salt Lake City and the Pacific Coast, returning by the Northern route.

THE PENINSULAR STOVE COMPANY of Detroit, Mich., have just brought out a Furnace booklet, which they are sending to Furnace dealers, as well as to architects throughout the country. It deals with the Peninsular Warm Air Furnaces and Hot Water Heaters, and shows, by means of general and sectional views, accompanied by descriptive letterpress, the important features embodied in the construction of these goods. Some of the engravings consist of views of buildings which have been furnished with Peninsular Heaters, and there is also a *fac-simile* of the guarantee bond given with each Heater sold.

THE RAYBURN FURNACE & FOUNDRY COMPANY, Columbus, Ohio, are established at the corner of Water and Scioto streets, and have been making the Unique Hot Air Furnaces for hard wood and soft coal since last December. They report that the Unique Furnaces that were put in during the winter have made a record for satisfactory service.

LOUIS STOCKSTROM, secretary and manager of the Quick Meal Stove Company, St. Louis, accompanied by his family, sailed Thursday, April 26, for Europe on the North German Lloyd steamship "Bremen." Mr. Stockstrom intends to be absent about five months and expects to spend some weeks at Paris. The Quick Meal Stove Company will give in Paris practical demonstrations of the merits of their Quick Meal Oil Stoves, but in this connection it is interesting to state that fires are prohibited within the Exposition grounds and the company will exhibit with an established house outside of the grounds.

HENRY N. CLARK COMPANY of Boston, Mass., announce under recent date that they have purchased the entire stock, fixtures and good will of Everett Westcott, successor to the late Thomas A. Westcott, and have moved the same to their own large repair store. This store was fitted up some two years ago with all of the latest improvements, and the company have excellent facilities for promptly filling repair orders.

THE MICHIGAN STOVE COMPANY had with them last week their traveling salesmen from all sections of the country, and entertained them in a style characteristic of this enterprising house. On Monday they were given a banquet at the Detroit Club; on Tuesday evening there was a theatre party, and on Wednesday afternoon the guests were given a tally ho ride around the city. An interesting feature of the week's entertainment was a visit on Wednesday morning to the various departments of the company's works. In each of the departments the employees were assembled and addressed the visiting travelers through a representative, giving assurances of a hearty welcome and of the mutual good fellowship and cordiality existing between the commercial and manufacturing departments. Addresses were made by John Dwyer in behalf of the mounters, George Robarge in behalf of the molders, and Louis Netzel in behalf of the polishers. Responses were made by General Manager Geo. H. Barbour for the company, and by a number of the traveling representatives.

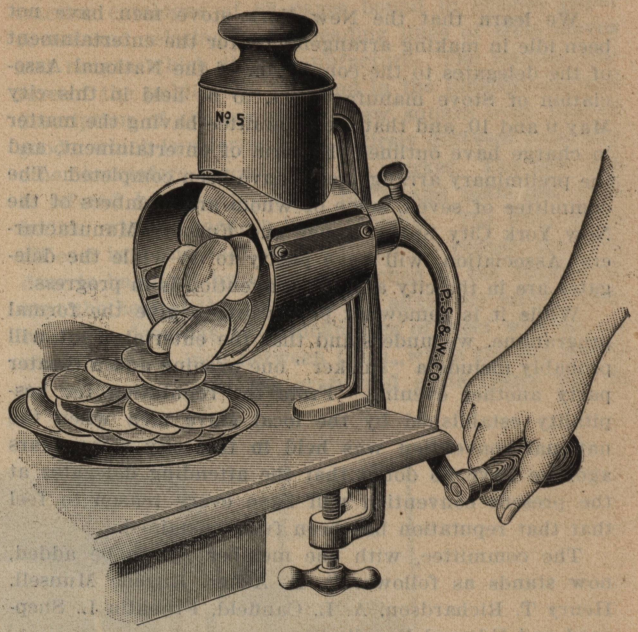
THE FOREST CITY FOUNDRY & MFG. COMPANY, Cleveland, Ohio, are sending out a very neat little book devoted to their Monarch Hot Air Furnace, which is all cast iron with top return flue. It opens with a history of the Furnace, followed by broken views showing the construction and fire travel. The Furnace is made with a special gas burning section for soft coal, and cuts show the method of its operation. It also contains a detailed description of the construction with price-list and tables of dimensions.

J. M. LITCHFIELD, Beekman street, New York, having covered the earth with Cook Stoves and Ranges, has found it necessary to go to the sea for further fields, so to speak. One of his latest transactions is selling a No. 885 Jewel four-burner Gasoline Stove for use on the yacht "Amorita." This Stove will take the place of a French Range which was discarded as too cumbersome and heavy. The "Amorita" carries a naphtha launch, so that a Gasoline Stove can be easily supplied with fuel.

IT IS REPORTED that efforts are being made to organize the Stove foundry companies of Canada into a single corporation. Valuators are going over the buildings and plant of Hamilton Stove foundry companies, of which there are five. Besides the five in Hamilton there are five large concerns in other parts of Ontario said to be considering the proposition.

Vegetable or Food Cutter.

Peck, Stow & Wilcox Company, Southington, Conn., and 27 Murray street, New York, are just putting on the market the No. 5 vegetable cutter here illustrated. It is very simple in construction, with but practically two working parts so far as operating and cleaning after use is concerned. The utensil is about 15 inches high over all. The cast iron cylinder is 4¼ inches in diameter front, tapering to 3 inches, has four steel knives screwed to the outer surface and the arbor to which the crank is attached is machined for easy turning. A turn of the crank thumb screw releases the cutting cylinder, which is one piece of metal, and the whole part can be slipped out of the standard for cleansing. The hopper and standard are also one casting, all heavily tinned. In the top is a hard wood block with which to gently force the vegetables or food down on the knives, slicing potatoes, &c., about 1-16 inch thick for frying, &c. It can also be used for cabbage, beets, cheese, or any similar purpose according to the ingenu-



Vegetable Slicer.

ity of the operator. The knives can be readily sharpened on the cylinder or removed if necessary.

All Steel Adjustable Thimble.

We illustrate herewith an all steel adjustable thimble, which is one of the specialties manufactured by the L. B. Baker Mfg. Company, Racine, Wis. The heads are made of stamped steel, rendering breakage impossible. The cylinders are of sheet steel, double seamed to head, thereby preventing indentation of the cylinders. Adjustment can be made from either end by means of button head on spring, securely fitting the slotted opening in

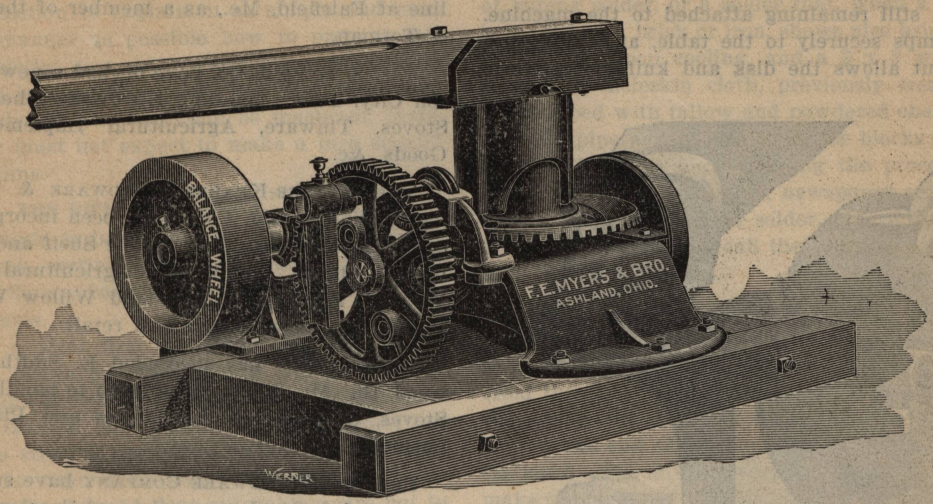
All Steel Adjustable Thimble.

head, as shown in cut. Both heads and sides are finely finished with a coating said to be a nonconductor of heat, baked on.

JOHN KENNING & Co. have succeeded Kelly & Kenning at Manson, Iowa, retailers of Shelf and Heavy Hardware, Stoves, Agricultural Implements, Sporting Goods, &c. The firm comprise John Kenning, senior member, Andrew J. Hicks, a former employee, and R. C. Ballstadt, formerly of the Calhoun County Bank.

Myers' Horse Power Pumping Jack.

The accompanying illustration represents a horse power pumping jack offered by F. E. Myers & Bro., Ashland, Ohio. The device is referred to as being complete within itself, needing no extra attachments; as being strongly built, neat and compact, the entire machine being mounted on 4 x 4 inch timbers, covering a ground surface of 26 x 42 inches. In use the machine is placed directly over a well. It is composed of the firm's horse-power, fitted with face plate to which pump rod attaches. The face plate is fitted with cogs on its periphery, which engage with a small pinion, operating a 65-pound balance wheel. It is explained that the effect or advantage of the balance wheel is to carry the piston over the dead points of the stroke and prevent the rebounding of the lever.



Myers' Horse Power Pumping Jack

Drop Spout Tea Kettle.

Central Stamping Company, 25 Cliff street, New York have just put on the market a novel style of tea kettle, a limited number of which have been successfully used in private for the past three years. The purpose of this construction is to enable one to draw boiling water without lifting the kettle, although it can also be used in the ordinary way. Fig. 1 shows the kettle as used on the top of a range, &c. Fig. 2 illustrates the method of using it. The spout is fed at the bottom by two asbestos packed tubes, the joints of which it is said will last for a term of years, but which can readily be tightened at will, if necessary. At the top are two enameled wood knobs with a hook by means of which the spout is kept upright. To draw water either of the knobs is given a slight turn to lift the catch and the spout drawn down, as shown in Fig. 2. The kettle is made of 16-ounce copper, nickel plated and burnished, has a flat bottom 9 inches in diameter, is No. 8 size and will be known in the trade as No. 888.

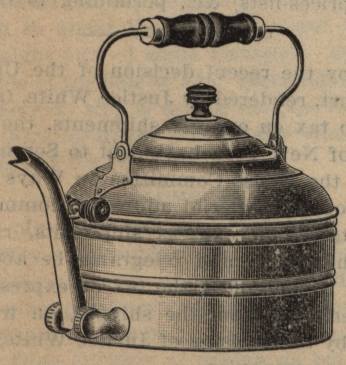


Fig. 1.—Drop Spout Nickeled Copper Tea Kettle.

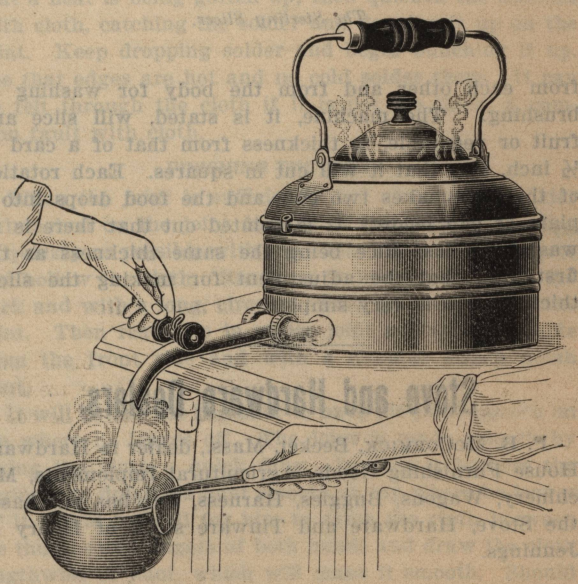


Fig. 2.—Method of Using the Kettle.

MARABLE HARDWARE COMPANY, succeeding the firm of E. F. Marable & Co., Clarksville, Texas, have been incorporated under the laws of Texas with a capital stock of $30,000, all paid in. W. A. Collins, of the firm of Varner, Collins & Dulany, Paris, Texas, is president; F. F. Marable, of the old firm, vice-president and general manager, and V. T. Trigg, of the old firm, secretary and treasurer. Each of the officers owns one-third of the stock. The company's line covers Hardware, Queensware, Stoves, Blacksmiths' Material, Buggies, Wagons, Farming Implements, Harness, Saddlery, Mill Supplies, &c. They have lately completed an iron warehouse for storing their Wagons, Buggies and heavy goods, the dimensions of which are 30 x 160 feet. They have also nearly completed an upper story to their brick warehouse, 50 x 75 feet. The business is both wholesale and retail, principally the latter.

ON MAY 15 John F. Howe is intending to open a new Hardware store at Freedom, Pa., carrying a general line of Hardware, Builders' Supplies, Farming Tools, Paints, Oils, Glass, Stoves and Ranges, and House Furnishing Goods. He will also make a specialty of tinning, slating, plumbing and general shop work. Mr. Howe requests catalogues and quotations on above lines from manufacturers and jobbers.

The Sterling Slicer.

N. R. Streeter & Co., Rochester, N. Y., are offering the vegetable and fruit slicer shown in the accompanying cut. The blade is referred to as being of tempered knife steel and as being so protected that only by gross carelessness can operators cut themselves. A pusher is provided to feed the article to be cut, but at the start, for a long cucumber, it can be thrown back out of the way, although still remaining attached to the machine. The slicer clamps securely to the table, and by a turn of a thumb nut allows the disk and knife to separate

The Sterling Slicer.

from each other and from the body for washing or brushing. The machine, it is stated, will slice any fruit or vegetable, in thickness from that of a card to ½ inch, also that it will cut in squares. Each rotation of the disk makes two cuts and the food drops into a plate or pan below. It is pointed out that there is no waste, the last slice being the same thickness as the first, and that the adjustment for making the slices thick or thin is very simple.

Stove and Hardware Dealers.

P. B. McCormick, Becket, Mass., dealer in Hardware, House Furnishing Goods, Agricultural Implements, Machinery, Wagons, Buggies, Harness, &c., has purchased the Stove, Hardware and Tinware stock of Henry A. Jennings.

Lyon & Matthews, Lumber dealers, Bowie, Texas, have purchased the Hardware, Stove, Agricultural Implement and Harness business of Lillard & Co.

L. A. Crandall is successor to W. H. Mullins in the Hardware, Stove, Farm Implement, Sporting Goods and Harness business at Herland, S. D.

B. S. Galloway has lately opened a new store at Great Bend, Pa., handling a varied line, including Shelf and Heavy Hardware, Farm Implements, Stoves, Sporting Goods, &c.

Chas. E. Barnard, Robert G. Fitzsimmons, and H. C. Thurber have formed a partnership at Jackson, Mich., under the style of Barnard, Thurber & Fitzsimmons. They will wholesale and retail Shelf and Heavy Hardware, Stoves, Tinware, Sporting Goods, &c. The store is fitted throughout in oak hard oil finish. Myers Ladders are used to get at goods on shelves. Their Stove and House Furnishing Goods department is on the second floor, which is reached by a very attractive stairway about midway in the store.

E. Totman & Co. have opened up in the Hardware, Stove, Farm Implement and Plumbing business at Waltham, Mass. Mr. Totman was formerly in the Hardware line at Fairfield, Me., as a member of the firm of Allen & Totman.

Jas. S. Byrd & Co. have opened a new store at Johnson City, Tenn., handling Hardware (Shelf and Heavy), Stoves, Tinware, Agricultural Implements, Sporting Goods, &c.

The Baxter-Kearns Hardware & Trading Company, Walsenburg, Col., have been incorporated with a capital of $35,000. They handle Shelf and Heavy Hardware, Stoves, Tinware, Agricultural Implements, Wagons, Buggies, Wooden and Willow Ware, Sporting Goods, &c., at wholesale and retail.

Edson Smith has succeeded E. Smith & Bro., Elmwood, Ill. Mr. Smith, in addition to handling Hardware, Stoves, &c., has added Bicycles and Plumbing to his business.

The Owl Hardware Company have succeeded T. B. Townsend & Co., Denver, Col., wholesalers and retailers of Hardware, Stoves, Farm Implements, Sporting Goods, &c. The firm are making a number of improvements in the store with a view to handling the stock more expeditiously. Mr. Kingore of the new firm was formerly in the Hardware business in Illinois, and Mr. Meumann, the other partner, is from Birmingham, Ala., where he was identified with the manufacture of ice.

Chas. G. Nash, late of the firm of King & Nash, Norwich, N. Y., has opened up a store under his own name, and will carry on the Stove, plumbing and heating business.

Alonzo J. Cottle has lately opened up in the Hardware, Stove, Harness and Buggy business at Hartsville, Ind.

B. W. Robb has purchased the business formerly conducted by T. D. Matson, Holly, N. Y. The stock comprises General Hardware, Stoves and Tinware, Sporting Goods and Bicycles. He will be pleased to receive catalogues, prices-lists, &c., pertaining to these lines.

Aroused by the recent decision of the United States Supreme Court, rendered by Justice White, in the matter of the stamp tax on express shipments, the Merchants' Association of New York have sent to Sereno E. Payne, chairman of the House Committee on Ways and Means, at Washington, a memorial address recommending that the stamp taxes on express shipments, railroad and steamship shipments, and telegrams be abolished. In any event, it is contended, the tax on express shipments should be removed from the shipper, on whom it had been placed by the decision of Justice White, and placed on the express companies.

It is officially announced that all applications for space at the Glasgow International Exposition, to be opened in May, 1901, must be made not later than June 1, 1900. They should be addressed to General Manager H. A. Hedley. The exhibits will be divided into eight groups, including agriculture, mining, industrial designs and manufactures, machinery and labor saving appliances in motion, locomotion and transport, marine engineering and shipbuilding, lighting and heating, &c.

It is reported that since the larger German enameled ware makers formed an association so many small outside manufacturers have started that the associated makers find it extremely difficult to effect sales.

WIPING JOINTS.

BY H. J. DAVIS, FRIENDSHIP, N. Y.

From time to time I have noticed in the columns of *The Metal Worker* inquiries from subscribers wishing information on wiping the various kinds of joints on lead pipe. I am a practical workman at this branch of the plumbing trade and I am in hopes I can be of assistance to those who wish to acquire the art.

It is my intention to explain in as simple and comprehensible a manner as possible how to prepare soil, make wiping cloths, test solder, and wipe the various joints known in lead working. By close observation and patient trial only can the operation be mastered, therefore the reader must not expect to make a nice smooth joint the first time.

THE DIFFERENT JOINTS.

The usual joints to be wiped are: Horizontal round, horizontal branch, vertical round and branch, horizontal flange, upright flange, bath waste joints, and horizontal and upright seams.

To prepare a joint first straighten the pipe to be joined. Short pieces of pipe can be straightened by dropping on plank or bench, using a little force and turning the pipe a trifle at each stroke. To take a dent out of pipe solder a strap of sheet lead or solder to the lowest place in the dent, then warm the dent with the torch and gradually pull the dent out, taking care not to pull a piece out of the pipe. When the dent is out melt off the solder. When cutting pieces of pipe from roll always unroll a little more than is wanted. This leaves the ends straight.

The necessary tools for wiping joints are as follows: Ladle, tap borer, turn pin, compasses, shave hook, hammer, rasp, bending iron, cloth, soil cup and brush, and solder pot.

PREPARING THE JOINT.

Square the ends of pipe to be joined with a knife, see that bore of pipe is true and rasp down the end of pipe at an angle of about 45 degrees. This is the end that goes inside. With a turn pin expand the end of pipe to go outside, turning the pin at each stroke of the hammer or mallet. After the pipe is expanded so that the rasped piece fits nicely inside rasp down the outside of the large end at about same angle as inside end, to reduce the belly of joint.

To prepare for wiping a branch joint bore a small hole in pipe with the tap borer and work out hole with bending iron to about the same diameter as the large end of a straight pipe of same diameter. Drift the lead up at each side of the hole so as to leave full bore through the pipe. The next step is soiling the pipe to prevent the solder from sticking to the pipe in any other place than the place cleaned for it.

MAKING PLUMBERS' SOIL.

To make plumbers' soil mix thoroughly with water such a quantity of lampblack as may be required until it is about the consistency of cream, then add about 1 to 2 ounces of glue, previously dissolved in hot water, and boil the whole slowly for 20 minutes, stirring it occasionally to keep from sticking or caking on bottom of dish. When about the consistency of paste take off fire. Take a clean piece of sheet lead and rub its surface with a piece of chalk to cut all grease, which would prevent soil sticking. Paint piece of sheet lead with the soil while it is hot and let it dry, then bend it back and forth and see if it will crack or peel off. Rub with palm of hand and see if it rubs off. If it stands these tests it is good. If it peels off add more water and lampblack and boil again. If it rubs off add more glue and boil again. Before soiling pipe rub it with chalk and then soil about 4 to 5 inches of each end, except where it has been rasped.

CLEANING THE PIPE.

Slip the joint together, and with compasses set at 2 inches, which is the proper length for nearly all joints, make a mark around pipe, having joined ends in center, and with shave hook clean the pipe from mark to ends. Do not merely scrape, but go down into the lead and take off a good shaving and get a bright surface. Cover the cleaned part with tallow to prevent the air from tarnishing the cleaning. The tallow also serves as a flux and assists in tinning the joint while wiping.

THE SOLDER AND WIPING CLOTH.

Now begin the operation with a good reliable brand of wiping solder, or a solder that, when a small amount is poured on a brick or iron, shows nice bright spots upon its surface upon cooling, and a 3 x 3 wiping cloth of ticking or moleskin cloth, previously treated by being well rubbed with tallow and powdered chalk alternately. Lay the pipe across two bricks or blocks and weight it so it will not be moved during the process of wiping. Place a piece of cardboard, newspaper or sheet iron under the joint to catch the solder. Have the pot of solder or metal, as plumbers call their wiping solder, good and hot—that is, a dull red.

THE WORK OF WIPING.

Take cloth in left hand, ladle in right and hold cloth so that the tips of the fingers are covered by end of cloth. Hold the cloth with thumb on top under cleaned part of the pipe at an angle of 45 degrees, so that solder will run off the end of the cloth, instead of into the palm of the hand. The latter is very apt to lead to profanity and make the beginner wish he had learned some other trade.

Stir and skim solder. Drop the solder on the cleaned part in a small stream or drop by drop, gauging the number and size of drops according to heat of solder. Do not drop solder in one place, as it will melt a hole through the pipe, but keep moving ladle and cloth back and forth, and dropping solder well back as far as the soiling goes to get the pipe hot. When considerable solder has fallen on cardboard and is cooled drop it back in pot.

GETTING UP A HEAT.

When the solder begins to run off the joint it shows that a heat is being gotten up; then quicken the motions with cloth, catching the solder and flopping it up on the joint. Keep dropping solder and begin bunching it up. See that edges are hot and no cold solder there. It can be felt through the cloth if it is not too thick, a common fault with cloth.

FINISHING THE JOINT.

When the joint is sufficiently hot and enough solder is bunched on the joint form it in the shape of an egg as quickly as possible with the cloth. Spread the fingers and hollow the cloth. Reach up in under joint from the back and with a long, circular sweep go well around the joint. Then reach up in under joint as far as possible from the front side and with a circular sweep finish joint.

It will bother the beginner to have his joint smooth on top where he leaves off. The joint is made smooth by giving the cloth a quick fling. In case it bothers the beginner to finish his joint smooth on top where he leaves off it would be well for him to catch the cloth between the thumbs and fingers of both hands and draw the cloth lengthwise of joint, which will make it smooth. Should the solder run off from the under side of joint it is because the solder is pretty fine or has too much tin in it. But little attention ought to be paid to this by the beginner, as it disappears as he progresses with the work.

TIN BRASS WORK BEFORE WIPING.

When soldering unions, nipples, goose necks and all brass fittings that are to be wiped to lead they should be thoroughly tinned with copper bolt and acid, and the nipples should be tinned the whole length of stem, so that should there be any small sand holes present they will be effectually closed up. Instead of soiling end of nipple next to shoulder, glue or tie a piece of asbestos or paper around it, and when joint is finished cut it off. Branch and cross joints are wiped in a similar manner, the soiling, however, being different.

PREPARING BRANCH JOINTS.

For a branch joint, after hole is worked out true, soil it and with the compasses set at 1 inch scribe around the hole and clean the space within the mark. Clean end of branched in pipe the same as for horizontal joint.

FLANGE JOINTS.

Flange joints are made by slipping a round piece of sheet lead over end of pipe before the pipe is flanged. Use a 1½ x 3 inch cloth for branch and flange joints. The solder for upright and flange joints has to be applied with a wooden spit stick. Hold ladle in left hand and with a small, thin, flat spit stick, ½ x 8 inches, spit the solder on the joint. If any trouble is encountered in getting joint hot use torch or irons on same until solder runs freely. Then, with cloth in left hand, wipe it.

The Columbia Acetylene Burner Cleaner.

In the accompanying illustration we show the Columbia acetylene burner cleaner, made by J. B. Carroll of 84 Market street, Chicago, Ill. It is pointed out that the importance of cleaning acetylene burners frequently

The Columbia Acetylene Burner Cleaner.

cannot be overestimated and that those who use acetylene lighting systems are beginning to realize the necessity of doing so. The Columbia burner cleaner is said to be the result of their practical experience in acetylene lighting. It has a small drill shaped pin, which enters the gas orifice and cuts out any deposit of carbon or soot, or any other obstruction that may lodge in the hole. The cleaner is made with a shank which acts as a guide for the small pin, so that it can be easily inserted, and at the same time clean out the large hole in the tip. It is made so that it can be carried in the pocket, and the cleaner proper is protected by a case.

Boynton Furnace Company.

A dainty and durable advertisement of their line of heating apparatus is being sent to the trade by the Boynton Furnace Company, 207-209 Water street, New York. They have had fine wood cuts made of their boilers and furnaces and have had excellent hand press prints made of them on wood cut paper. These prints are 19 x 25 inches in size and are sent in a highly finished oak frame and protected by glass. One print shows the Boynton Sectional, Admiral, Patriot and Niagara boilers, including 17 styles for steam and hot water heating.

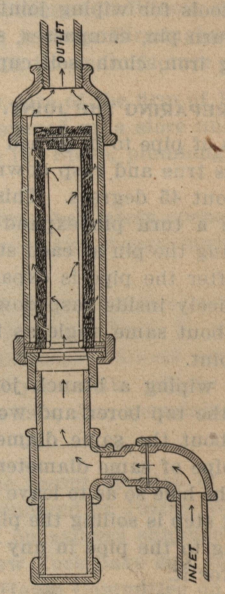
The company have recently added to their line of Sectional boilers a new size, having a grate 42 inches wide and well adapted for heavy duty. The line includes boilers having a steam capacity for carrying from 100 to about 6000 feet of steam radiation. The other print is devoted to their hot air furnaces, showing the Champion wood furnace, the Renown, Patriot, Crusader, Steel Dome, Niagara and the Boynton Gas Tight coal furnaces. Some of the furnaces are shown with new fronts and other improvements for convenience in operation, appearance and efficiency.

The Zero Valve & Brass Mfg. Company.

The 1900 catalogue of the Zero Valve & Brass Mfg. Company of Buffalo, N. Y., consists of 90 pages, printed on a highly finished paper, bound in a maroon cover with the address of the company in gilt letters. It states that since presenting their last catalogue they have purchased the Casler Valve & Brass Works, and have greatly increased facilities in having their own foundry and machine shop, so that all of the goods are produced in their own plant. The first pages of the book are devoted to the Zero, Vollmer, Casler and Arctic anti-freezing closet valves and stop and waste valves. These are designed for use on fixtures exposed where they are likely to freeze, so that the flushing apparatus can be placed below the ground beyond the reach of frost. The cuts show the valves in use in connection with hydrants and water closets, and sectional cuts show their operation. The company also manufacture a variety of hopper water closets, and among their specialties are air chambers, which are shown in great variety with their different styles of valves. They also show anti-freezing urinals, hydrants, street washers, cellar drainers, fresh air inlet guards, vent caps and Common-sense trap screw ferrules. The last page is devoted to their Jiffy boiler repair device, for repairing leaks in range boilers quickly. The last seven pages are devoted to cuts of the parts of their different valves for repairs, all numbered, and prices for the parts are given in connection with them.

The Leland Filter for Service Pipes.

In the accompanying illustration we show a sectional view of the Leland filter, made by the Leland Filter Company of Great Barrington, Mass. If the filter is placed on a supply pipe where it enters a building all the water used in the house must pass through the inner cylinder of fine wire gauze, where all the coarser impurities are stopped and fall into a part of the filter below the supply pipe, where they can be easily removed. The water then passes through two other cylinders of wire gauze, between which there is a packing of ground quartz. The water supply system should have a stop cock at a point where the filter is located, so that the water supply can be shut off, and there should be an-



The Leland Filter for Service Pipes.

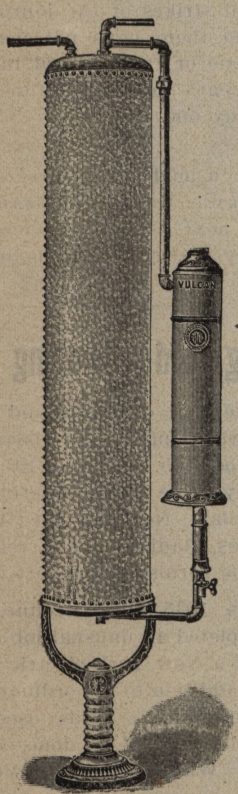
other stop cock on the service pipe above the filter, so that the water in the system can be prevented from running back when the filter is taken apart to be cleaned, or to have a new filter inserted. The filter is said not to diminish the force of the water supply until it has become thoroughly clogged. The checking of the water supply is a sure sign that it needs cleaning. The filter is also adapted for use in connection with pumps for the same purpose, and it is pointed out that it is impossible to pump any foul matter or dirt from a well when one of these filters is used on the suction pipe of the pump.

THE CANFIELD STOVE COMPANY of Rondout, N. Y., have been awarded the Government contract for the plumbing, heating and gas fitting in the new Library Building being erected at West Point Military Station. The building will cost $100,000. The above company also have the contract for the plumbing for the Eastern New York Reformatory at Napanoch, N. Y.

The New Vulcan Water Heater.

It is of special interest to the plumber to know of all new appliances that will increase his trade, especially through the summer months, and we present herewith an illustration of the new Vulcan water heater No. 7, designed for use in connection with the kitchen boilers when the coal fire is not used on account of heat. This heater is made by William M. Crane Company, 1131-1133 Broadway, New York, who claim that it will heat the water in boilers up to 40 gallons capacity. One of its many valuable features is the quick results obtained, it being almost an instantaneous heater; a good supply of hot water can be had within five minutes from lighting. The cold water on entering passes up through the center of the heater to the head, which is a solid brass casting, from which the water passes through 12 ¼-inch tubes to the hot water outlet inside of brass casting direct to top of boiler.

A powerful burner with an adjustable air mixer is furnished with each heater, and so placed that the space occupied is vertical, the mixing chamber not protruding at right angles to the boiler. At the bottom of each pair of tubes is a plug, which can be removed for the purpose of cleaning tubes from sediment. The heater is lined with asbestos. The whole heater is finished in aluminum, which will stand heat without discoloring. The heater can be used in connection with the water back on the coal range if so desired, and it is adapted

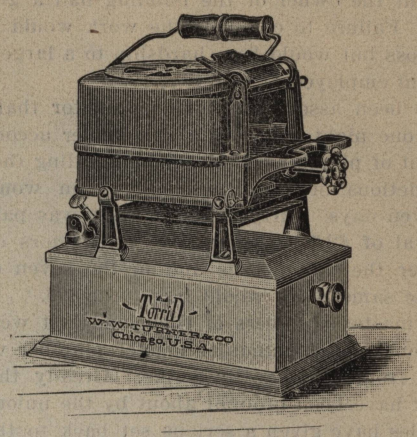


The New Vulcan Water Heater.

for use in connection with gas ranges. Another feature of the Vulcan No. 7 is that when a small amount of water is required only a small amount of gas need be used, as the boiler is heated from the top down.

The Torrid Square Tank Tinners' Furnace.

In the accompanying illustration we show the Torrid square tank tinners' furnace, made by W. W. Turner & Co., 183 Lake street, Chicago, Ill., which is said to have special features to recommend it to the practical man. One is the rectangular tank, which avoids the danger of upsetting on the bench or when used on a roof. It is provided with a 10-inch brass set pump when used for high pressure, or a rubber bulb pump for general use. It has a powerful horseshoe burner, designed to bring two flames of great heating power into contact with either one or two coppers, as may be used. It is provided with an independent flame for the generator, and a metal turret hood, with a reversible swing door to confine the flame so as to bring its full effect on the coppers. It has a circular opening in the top, to be used



The Torrid Square Tank Tinners' Furnace.

for a melting pot, and is provided with a register cover for this opening. It is pointed out that the furnace is capable of heating coppers weighing from 3 to 11 pounds, that it is noiseless in operation, and owing to having an independent generator it can be run with very low flame, consequently it is economical. All the parts are interchangeable, so that the results of wear and tear can be replaced.

Boston Master Plumbers' Ball.

The eighteenth annual ball and entertainment of the Master Plumbers' Association was held Monday night, April 23, in Berkeley Hall. There were about 100 couples present, all of whom thoroughly enjoyed themselves.

The Reception Committee comprised William Lumb, J. F. Davlin, W. H. French, P. H. Winn, W. A. Johnson, J. J. Keegen, Edwin Mills, W. E. Sherriffs, James Tucker, William Bramha, P. Callahan, R. Dowd, William Boyd, H. K. Paine, Joseph Brown, William Steele, H. L. Thomas, C. E. Baldwin, John Crawford, Isaac Riley, D. G. Finnerty, W. H. Greenleaf, J. C. Kelly, Edward Moore, D. J. Lewis, A. F. Curtin, W. H. Griffith, Austin Arey, J. P. Vogel, Geo. O'Brien, J. A. Larraway, E. F. Williams, C. A. Bray, J. H. Meech, J. C. Tucker, M. Ahern, R. F. Denvir, T. H. Duggan, David Smith, D. A. Horgan, J. K. Tully, T. E. Sharpe, C. M. Bromwick, R. W. Moore, J. Rhodes, A. E. Kendrick, T. J. Drury, G. W. Branch, J. H. Adcock, A. Hoffecker, G. J. Dean, J. J. Kelley, J. F. Dwyer.

The dancing was in charge of the following: Floor marshal, William A. Tucker; assistants, C. H. Croning and A. E. Touchet; aids, L. E. O'Mealey, J. J. McCarthy, J. F. Donlan, J. W. Barry, H. W. Tombs, J. A. Garrity, Samuel Adams, B. F. Godfrey, T. J. Fitzpatrick, W. J. Murtagh, G. A. Wilson, J. J. Logan, T. H. McDonald, J. J. Clark, M. Harold, M. C. Higgins, G. E. Pratt, A. J. Granara, N. W. Tucker, J. A. Boyd, L. H. Jacobs, T. Neville, E. W. Cox, P. F. Carley, C. A. King, T. F. Reardon, J. E. Bagley, J. S. Todd, T. J. Hartnett, Thos. F. Garvey, E. F. Callahan, J. P. Tancred, James O'Neil, C. J. Mansfield, H. H. Collins, J. C. Shaughnessy, W. F. Finneran, Andrew Bain, P. F. Capper, Thomas Mayo, J. J. Tierney, John Holmes, Fred. F. Ryan, J. F. Drury, E. F. Crosby, Wm. A. Courtney, W. G. Roemer, C. F. Driscoll, T. H. Naughton.

THE MOORE HEATING COMPANY bid $12,370 and secured the contract for heating the East Side High School at Minneapolis, Minn.

Master Plumbers at Work.

A notable feature of the strike of the journeymen plumbers at Chicago is that on one contract a number of master plumbers donned their overalls and went to work for a fellow contractor. The instance was caused by a special condition where not only the plumbing contractor but the owner of the building had a great deal at stake. Failure to complete the work would not only cause a loss but would be a hardship to a large number of innocent employees.

It has been asserted by the contractor that in five hours in one night one man and a helper accomplished an amount of plumbing work at the building that under the restrictions of the Plumbers' Union would have taken seven days. Fifty cents an hour was paid, making a total of $2.50, whereas the contractors complain that under the union scale and in the seven days required the same work would have cost $28.

Eight master plumbers of Cleveland last week went to work on a job for another master plumber who was suffering from a sympathy strike. Already the conditions that have been brought about by the unions in various trades have given a serious set back to the building business in many places.

Texas Master Plumbers.

The annual convention of the Texas State Association of Master Plumbers was held at Houston on April 19. The morning session was occupied with speeches, reports of officers and committee work. In the afternoon the following officers were elected:

President, J. P. Keithly, Houston.

Vice-President, A. Deutz, Laredo.

Secretary, J. B. Collins, Houston.

Treasurer, Joseph Netzer, Laredo.

Executive Committee: A. Shaper, San Antonio; A. Gutzeit, San Antonio, and D. F. Sullivan, Dallas.

Delegates to National Convention: Ed. Braden, San Antonio, and D. Woodhead, Houston.

Directions for the Use of Heating Plant.

It is the rule with all large firms of heating engineers, says the *Ironmonger* of London, to furnish with each heating apparatus they erect written or printed directions for its proper use for the guidance of the attendant. The directions embrace the use of all valves (which are numbered in some way), and hints as to stoking, cleaning and periodical attention. Every apparatus should be provided with these particulars. Even when the apparatus is handed over to a resident engineer, as it is in a hospital or other institution, it is possible that he is comparatively ignorant of heating work. When the apparatus is handed over to an utterly unskilled person the prospects of proper attention are very small. Carefully drawn up directions remedy this; a diagram makes the results still more satisfactory.

A recent occurrence illustrates this. A large country house was heated by hot water radiators being placed in every room, the total number of radiators being about 50. There were three pairs of mains, with branches in several directions. No directions for use were provided, but the foreman went over the job with the butler and carefully explained everything. It is doubtful if the butler retained any recollection of his instructions except the general impression that the apparatus was remarkably confusing. The consequence was complaint at the outset. Some parts overheated and others were not hot enough, while the servants' amateur attempts at regulation produced unexpected results. It became necessary to send a man to work the apparatus for a day or two, and, finally, to provide a set of written directions.

There are doubtless many apparatus working with limited efficacy at this moment, and yet believed to be doing their best. Many people will put up with an indifferently working apparatus before they would make complaint. Directions prevent all this.

New York City Notes.

A strike of the journeymen has been ordered on the Temple Bar Building at Court and Joralemon streets, Brooklyn, W. H. Quick of Manhattan being the plumbing contractor, by the Brooklyn journeymen belonging to the Brotherhood against the Amalgamated journeymen employed by Mr. Quick. All the men employed on the building are out, and the issue will probably develop into a question of strength between the Board of Walking delegates and the Building Trades Council.

* * *

Many contracts for fine large buildings are in the market and competition is strong in figuring on same. The Harlem and Bronx work, however, is practically at a standstill, none of the flat and tenement house speculative builders doing anything.

* * *

Brooklyn branch has issued its new year book for 1900, giving names of all licensed plumbers in the city. names of all city officials and their offices whom the plumbers come in contact with, and all city association information.

* * *

The threatened strikes of the journeymen caused by the split between them have not materialized to any extent and the one or two ordered in Manhattan have died a natural death in a short time and without inconvenience to any one.

* * *

Brooklyn branch held a large and enthusiastic meeting last Thursday. Manhattan branch will hold its regular meeting next Tuesday evening, and President Brown has many matters of trade interest to be discussed.

Heating and Plumbing Notes.

THE Winchester line of Steam and Hot Water Heaters have been given a prominent place in the showroom of Judson A. Goodrich, 105 and 107 Beekman street, New York. They have been tastefully decorated and make a fine display. Not only the Winchester Boilers but all the Valves, Radiators, &c., required for a heating system can be furnished at short notice.

T. J. CUMMINS, 1035 Third avenue, New York City, has recently completed an unusual job of plumbing work in the stations of a New York electric company for telephone work. In addition to the ordinary plumbing work, there was, owing to the acids used, a considerable amount of lead burning to be done, which contract he sublet to T. B. Walmsley of 45 Vesey street, New York. Two of these stations were similar in equipment, having 75 tanks arranged in three rows in the basement. These tanks were all lined with 8-pound sheet lead, with the seams burned, and the waste acids from these tanks when they were renewed was discharged on the tile floor and ran to two strainers in the floor, to each of which a large lead pipe was connected and carried out to the diluting tank before being discharged to the sewer.

STATE SECRETARY John S. Leslie, Sharon, Pa., informs us that the sixth annual convention of the Master Plumbers' Association of Pennsylvania will be held at Hotel Rider, at Cambridge Springs, Pa., on May 8.

SUPERINTENDENT FISHER of the City Hall, Buffalo, N. Y., stated that the new plumbing work in the building has been postponed indefinitely because of the strike ordered a week ago and the inability of the plumbers and steam fitters to agree between themselves as to whether certain work is plumbing or steam fitting.

WILLIAM MORAN, Titusville, Pa., has secured the contract for the plumbing, hot water heating and gas fitting to be installed in the new additions that are now being built to the North Warren Asylum for the Insane.

A LICENSE has been granted to Robinson Brothers of Williamstown, Vt., to do general plumbing work at Barre, Vt.

JOHN R. GILMOUR, at one time superintendent for the Standard Mfg. Company of Pittsburgh, died recently at Denver, Col., where he had gone in the endeavor to ward off lung trouble. Mr. Gilmour was born in Canada 36 years ago, and went to Pittsburgh in 1888. About two years ago he resigned from the Standard Mfg. Company to become connected with the foundry department of the Westinghouse Company. He is survived by a widow and three small children.

THE AIR CHAMBER, FAUCET & VALVE COMPANY of New York City, with a capital of $5000, have been incorporated for the manufacture of Water Cocks, Faucets, &c., by E. A. Pohlman, A. Blessing, J. J. Greville, T. J. Ford and J. McElligott, all of New York City, and G. Dealing of East Orange, N. J.

E. R. TIERNEY, New Haven, Conn., has taken the contract to put in an H. B. Smith Company's steam boiler in Henry Bald's building, on Peck street, where he has also just completed the installation of a C. S. Mersick & Co.'s Montauk lavatory.

D. R. MCCALLUM of the Novelty Iron Works, Canton, Ohio, was a visitor in New York this week, and reports a good stock of Boilers on hand so that prompt shipments can be made. The firm are also making a line of Radiators.

ROLLIN C. WILSON, manufacturers' agent for Plumbers' Wood Work and Brass Work, Lubricators and Engine Trimmings, has announced that after May 1 his address for office and warehouse will be 74 Beekman street, New York City. He says he will have much better facilities for filling orders, and will be enabled to carry a sufficiently large stock to insure prompt shipments. He will sell to the jobbing trade exclusively, and from the stock of Brass and Wood Work which he expects to carry, it will be sufficiently large and well assorted for jobbers to favor him with their "pick up" orders.

ON and after May 1, 1900, the H. W. Johns Mfg. Company of 100 William street, New York City, will remove their stock room from 61 Beekman street to Ryders alley. They have secured larger quarters and will now be enabled to carry a complete assortment of Sectional Pipe Coverings, Fittings, &c., to accommodate their city trade. Asbestos Fire Felt Sectional Pipe Covering for high pressure work, Molded Sectional Pipe Covering for medium pressure work, Champion Sectional Pipe Covering for low pressure work (25 pounds or less), Aqua Sectional Pipe Covering for hot water, Asbestos Cement Felt, Mineral Wood, Hair Felt.

THE HART & CROUSE COMPANY, Utica, N. Y., inform us that George D. Coones has been appointed their Chicago manager, with headquarters at their old stand, 79 Lake street, Chicago. Mr. Coones will always be glad to see Western customers when they are in Chicago and explain the special features of the Royal line of heating apparatus.

R. H. CURRY, Highlands, Mass., has moved his plumbing business into his new quarters at the corner of Winthrop place and Franklin street.

THE Supervising Architect at Washington, D. C., will receive bids until May 12 for the boiler plant, heating and ventilating apparatus for the United States Mint at Philadelphia.

CHIEF QUARTERMASTER GEORGE F. POND, St. Paul, Minn., will receive bids until May 15 for plumbing the new barracks at Fort Meade, S. D.

ST. JOHN BROS., Colorado Springs, Col., have secured the contract for the plumbing and heating systems for the Steele Memorial School.

J. E. REYNOLDS has sold out his plumbing establishment on North Main street, Brockton, Mass., and opened up in Bridgewater.

ONE of the results of the formation of the Sanitary Mfg. Company, Pittsburgh, Pa., known to plumbers as the "bathtub trust," says the *Herald*, is the receipt of an order for 2000 bathtubs, to be delivered in Germany within the next two months. The order came from one of the largest sanitary supply houses in Germany. The company's agents say that, the stress of individual management being relieved to a great extent, the new company's executives will be able, even at less expense than could the individual concerns, to give the foreign trade the attention which its value has deserved, but, to some degree, in vain, for years past.

THE NAME of the Master Steam and Hot Water Fitters' Association of the United States, at Chicago, has been changed to the National Association of Master Steam and Water Fitters.

HEATER CATALOGUE No. 1 reaches us from the Prizer-Painter Stove & Heater Company, printed on fine paper and illustrated with half tone engravings, devoted to Henderson Orbis Water and Steam Heaters. The introduction states that this line is designed for comparatively small heating plants and the construction is such as to afford an efficient and economical apparatus. It presents a large fire surface and is made in two styles, full vertical return flue and a top horizontal return flue, the engravings showing the fire travel. The grate and ash-pit construction are also shown. A rotary shaking grate with a duplex center grate is provided. The whole ash pit front can be easily removed and the grate taken out for repairs. The Heaters are made in five sizes, with grates 16, 18, 20, 22 and 24 inches in diameter and rated to carry from 350 to 900 feet of direct hot water radiation.

A NEW FOUNDRY and machine shop are being built at Murray street and Avenue D., Newark, N. J., by the John Simmons Mfg. Company of 102 Pearl street, New York. The plant will be used in the manufacture of soil pipe and fittings, plumbers' castings, &c. The main foundry will be 110 x 220 feet, with cupola house adjoining. There will also be a boiler and engine house, storehouse, tar house and pattern storage house. The new plant will be capable of a production of 100 tons daily, but the buildings are so designed as to permit of very formidable additions, which it is not unlikely will soon be made, as the company may branch out in other lines.

New Firms and Changes.

THE WATERLOO STEEL TANK COMPANY of Waterloo, Iowa, have been incorporated with a capital of $10,000 to manufacture and sell Steel Tanks, &c. L. C. Burkitt, W. D. Pollock and I. A. Burkitt, all of Waterloo, are the incorporators.

THE SMEDLEY STEAM PLUMBING COMPANY of Dubuque, Iowa, have been incorporated with a capital of $50,000, by Peter Kiene, Frank W. Altman, W. W. Bonson, F. G. Hornbogen, Robert Bonson, Eugene P. Kiene, James A. Hayes and Edward Smedley.

EDWARD COLLINS has purchased an interest in the plumbing business established by Charles Maloney at Goshen, Ind., and the firm will hereafter be known as Maloney & Collins. It is understood a shop will be operated in Elkhart as well as Goshen, and Mr. Collins will have charge of the office work.

THE WILLIAM E. WOOD COMPANY, Baltimore, Md., have been incorporated by Charles J. Wood, Samuel R. Wood, Charles J. Wood, Jr., and Walter P. Wright of Baltimore and Samuel Riggs of Montgomery County, for the manufacture of heating apparatus. The capital stock is $50,000.

THE VICTOR HEATING COMPANY of New York have been incorporated to manufacture Steam and Hot Water Heating Apparatus, with a capital of $10,000, by John A. Connelly of Cold Spring and George O. Hanlon, New York City.

THE J. B. COLT COMPANY, 83 Montgomery street, Jersey City, N. J., have been incorporated to operate gas plants, &c., with a capital of $500,000, by Jos. E. Clark, George W. Litterest and Daniel E. Everts.

THE CHICAGO HINGE & WASHER COMPANY, Chicago, have been incorporated for the purpose of manufacturing Plumbers' Supplies, with a capital of $5000, by M. Singer, E. L. Hance, W. P. Knoche, all of Chicago.

THE firm formerly known as W. H. Meredith & Co. have been succeeded by F. P. Shaddinger & Co., and will be located at the southwest corner of Pearl and Ludlow streets, Cincinnati, Ohio. In addition to Engineers' Supplies of every description, Steam Pumps, Valves, Pipe Fittings, &c., they will make a specialty of Steam and Hot Water Heating for public and private use. W. H. Meredith will continue as manager for the new company.

WILLIAM MORRISSEY and Patrick Ryan have formed a partnership and will conduct a plumbing store in the Murphy block on Park street, Adams, Mass.

THE T. J. MOONEY PLUMBING COMPANY of Nashville, Tenn., have been incorporated with a capital of $50,000 by T. J. Mooney, M. F. Rooney, John E. Bouchard, W. J. Mooney, T. A. Breen and F. W. McGovern.

THE ABNER ACETYLENE GAS COMPANY, 36 La Salle street, Chicago, is the title of a new company just incorporated, who will control the Abner Acetylene Generator made by Henry Giessel & Co. of Chicago. The company's offices are located at 36 La Salle street, where they have a suite of rooms. The officers are W. C. Heimbeucher, president and treasurer, and W. W. Turner, secretary and sales agent.

Some Results of Co-operation.

The subject of social industrial betterment was treated in an interesting and instructive manner the other night by Dr. William H. Tolman, special agent for the Department of Education and Social Economy of the United States Commission to the Paris Exposition, in an illustrated lecture at Cooper Union, New York. A great deal of the lecture was devoted to showing how commercial success could be secured through sympathy and co-operation between employer and employee, the speaker illustrating his subject by details of successful experiments in this direction made by various large employers of labor in the United States, such as Patterson Brothers of Dayton, Ohio; the Sherwin-Williams Company of Cleveland, Ohio; the Draper Company of Hopedale, Mass.; Ferris Brothers of Newark, N. J., and J. H. Williams & Co. of Brooklyn, N. Y.; also the Krupp Steel Company at Essen, Germany; Lever Brothers, soap manufacturers, at Port Sunlight, near Liverpool, England, and Cadbury Brothers, the cocoa makers, of Birkenhead, England. All these concerns, said Dr. Tolman, had proceeded on the principle of sympathetic co-operation, and their experience proved in a practical manner that nothing pays the employer better than looking after the welfare of his employees. In connection with the establishment of the English firm of Lever Brothers the model industrial village of Port Sunlight has been developed. Instead of profit sharing, the firm in question use a percentage of their profits for the beautifying of the grounds, establishing reading rooms, playgrounds, swimming pools, &c., and building cottages that are both beautiful and comfortable at a rental of $1.25 a week.

To Dr. Tolman's list might be added the model manufacturing town of Vandergrift, Pa., where the Apollo Iron & Steel Company have carried out very completely the plan of making their workpeople comfortable and giving them attractive surroundings and providing them with recreation and amusements.

The officials of the Amalgamated Association of Iron, Steel and Tin Workers are preparing for the annual convention of the organization, which will be held in Indianapolis on May 15. The Wage Committee has been called to meet in Pittsburgh on May 10, to prepare a report for the convention. The coming meeting promises to be one of considerable importance, as it is thought likely that the workmen affiliated with the association will ask for an advance in wages all along the line. There will probably be a sharp conflict, too, in the election of officers, as both President Theodore J. Shaffer and his assistant, B. I. Davis, will meet with opposition of a strong nature in their efforts for re-election.

With the view of increasing the illuminating power of the gas and competing with electricity for street lighting, the Paris Gas Company have recently been carrying out experiments with the Welsbach burner. At first about 20 street lamps were fitted with the device, and the result was so satisfactory that the Welsbach system is now being rapidly extended. In course of time, it is said, most of the streets of the French capital will be lighted by this means. Electric lighting is at present confined to the boulevards, the Avenue de l'Opera and the large open spaces, but for ordinary conditions of lighting it does not seem likely yet awhile to supersede gas.

The closing exercises and annual exhibition of the school department of the General Society of Mechanics and Tradesmen were held last Friday evening in the new building of the society, 16-24 West Forty-fourth street, New York City. Addresses were made by President Stephen M. Wright, Vice-President Frank E. Conover and Louis Rouillon, head master of the school department.

The United States Wind Mill, Engine & Pump Company of Batavia, Ill., have secured an export order for a wind mill of unusual proportions. The wheel is to be 40 feet in diameter and will be mounted on a steel tower 60 feet high. An 8-inch pump and a 7000-gallon tank constitute the equipment of the mill, which goes to the Atlas Mountains, in Algeria. The same company lately shipped a 13-foot mill and a 40-foot steel tower, to be used at Mount Lebanon, near Beyrout, Syria, and an 18-foot mill, with an 80-foot steel tower, for use at Alexandria, Egypt.

Railway motor engineering is a new course of instruction offered by the International Correspondence Schools, Scranton, Pa. It is designed for operators and those who wish to become operators of electrical machinery, and will provide practical instruction by correspondence for the operation and maintenance of electric cars and motors.

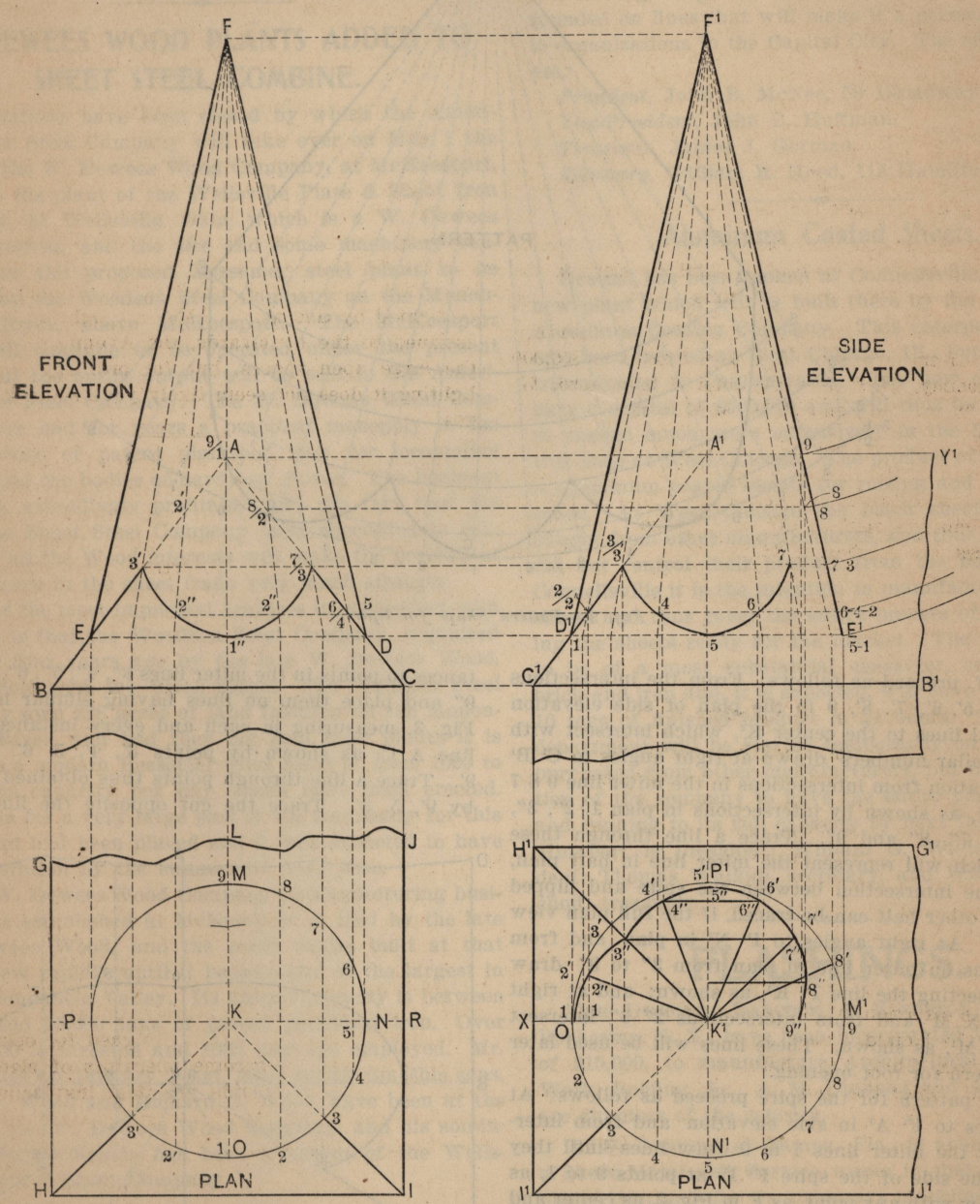
The "circulation statement" issued by the Treasury Department for April 1, 1900, shows that, for the first time in the history of the country, the *per capita* circulation has crossed the $26 line, and the total circulation has exceeded $2,000,000,000, while the amount of gold and silver certificates in circulation is larger than at the corresponding date of any previous year.

The citizens of Aurora, Ill., have decided to raise a fund of $100,000 to offer inducements to desirable Chicago industries, which are being disturbed by the labor troubles in that city, to remove to Aurora. Four Chicago firms, employing 1500 men, have already expressed their readiness to move to Aurora. The Standard Pneumatic Tool Company, employing 200 men, made the change last month.

A new law has been passed in Germany prescribing vigorous penalties for theft of electric power.

MITER LINES FOR CONICAL SPIRE.

A correspondent in Pennsylvania wishes us to publish in *The Metal Worker* the method of obtaining the miter lines and pattern for a conical spire mitering upon the hips and ridge of a roof, as shown in Fig. 1, in which A B C shows the front elevation of the hipped roof, shown in plan by G H I J, and D E F the front view of the conical spire, the section on the line D E being shown in plan by M N O P. The apex of the spire F in elevation comes directly over the apex of the hipped roof at K in plan, which is the center point from which the circle is struck. Draw the hip lines in plan, H K and K I, and the ridge line K L. Divide the half circle M N O into equal spaces, as shown by the small figures 1 to 9, being careful to have an intersection on the hip line at 3, also on the line P N drawn through the center K at 5. At right angles to H I in plan and from the intersections 1 to 9 and 2′ 3′ in the circle draw lines upward intersecting the base of the conical spire E D, as shown; from these intersections draw lines to the apex F intersecting the pitch of the roof A B and A C at 3′ 2′ and from 1 to 9, respectively, as shown, the small figures on the pitched roof corresponding to similar figures in plan. Draw a side view of the roof and spire and corresponding plan, as shown. Let A^1 C^1 B^1 Y^1 be the side elevation of the hipped roof and G^1 H^1 I^1 J^1 the plan. D^1 E^1 F^1 shows the spire, the apex of which is placed over the apex A^1 of the roof, as shown. Draw the plan M^1 N^1 O^1 P^1, which shows the section on D^1 E^1 in elevation and is struck from the center K^1. Draw the hip lines H^1 K^1 and K^1 I^1 and the ridge line K^1 M^1. Divide the half circle O^1 N^1 M^1 into the same number of spaces as similar half circle in the plan of front elevation. As that portion of the spire shown from 3′ to 3 in both plans rests on or intersects with the front of the hipped roof, then, at right angles to X M^1 in plan of side elevation and from intersections 3 3′, 2 2′ and 1



Miter Lines for Conical Spire.—Fig. 1.—Plans, Elevations and Miter Lines.

draw lines intersecting the base of the spire D^1 E^1 in elevation, as shown; from these intersections draw lines to the apex F^1 intersecting the pitch of roof A^1 C^1 at 1, 2 2′ and 3 3′. Now from these intersections and parallel to C^1 B^1 draw lines to the front elevation intersecting radial lines of similar numbers, as shown by 3′, 2″, 1″, 2″, 3 in front elevation. Trace a line through these points. Then will 3′ 1″ 3 be the miter line of the conical spire on the front of the hipped roof.

For the miter cut on the side of the roof, at right angles to X M^1 in plan of side elevation and from the intersections 3 to 9 in plan carry lines upward intersecting the line D^1 E^1 of the base of the spire, as shown, and from these points draw radial lines to the apex F^1. Now parallel to B C in front elevation and from intersections 3 to 9 on A C draw lines toward the

side elevation intersecting radial lines of similar numbers drawn from intersections on the base line D^1 E^1, as shown by points 3, 4, 5, 6, 7, 8 and 9. Trace a line through points thus obtained; then will 3 5 9 be the miter line for the spire on the sides of the hipped roof. If the miter line is desired in plan, which is not necessary in the development of the spire pattern, but is required in the developments of the openings to be cut into the hipped roof, proceed as follows: From the intersections 1, 2′, 3′, 4′, 5′, 6′, 7′, 8′, 9 in the plan of side elevation draw radial lines to the center K^1, which intersect with lines of similar numbers drawn at right angles to C^1 B^1 in side elevation from intersections in the miter line 9 8 7 6 5 4 3 2 1, as shown by intersections in plan 1, 2″, 3″, 4″, 5″, 6″, 7″, 8″ and 9″. Trace a line through these points, which will represent the miter line in half plan, showing the intersection between the spire and hipped roof. The other half can be traced, if the full plan view is desired. At right angles to P^1 N^1 in plan and from intersections on miter line in plan from 3″ to 9″ draw lines intersecting the line P^1 K^1, as shown; and at right angles to X M^1 and from intersections 2″ 3″ intersect the line X M^1, as shown. These lines will be used later in the pattern for roof opening.

For the pattern for the spire proceed as follows: At right angles to F^1 A^1 in side elevation and from intersections in the miter lines 1 to 9 draw lines until they intersect the side of the spire F^1 E^1 at points 9 to 1, as shown. Now with any point, as F in Fig. 2, as center and with radius equal to F^1 E^1 in side elevation in Fig. 1 draw the arc 9^1 9^1 in Fig. 2, upon which place the same number of spaces as that used in the plan O^1 P^1 M^1 N^1 in Fig. 1, as shown by the small figures 9^1 to 1 to 9^1 in Fig. 2. From these points draw radial lines to the apex F. Now with radii equal to F^1 9, 8, 7 3, 6 4 2, and 5 1 in side view in Fig. 1 and from F in Fig. 2 as center describe arcs intersecting radial lines of similar numbers, as shown. Trace a line through points thus obtained; then will A B C D E F be the pattern for the spire to miter over the hipped roof.

For the pattern for the roof opening take the stretchout of B A C in front elevation in Fig. 1 and place it on a horizontal line, as B A C in Fig. 3. At right angles to B C and through B, A and C draw the lines D H, F A and E I, respectively. Now take the distance from R to I in plan in Fig. 1 and place it as shown in Fig. 3 by C I and B H; then draw a line from H to A and A to I, which is the pattern for sides of the roof, minus the opening.

Take the distances of 9, 8, 3 7, 6 4 5 on the line A C in front elevation in Fig. 1 and place them as shown by similar figures on A C in Fig. 3. At right angles to A C and through these points draw lines, as shown. Now, measuring in each and every instance from the line P^1 K^1 in the plan of side elevation in Fig. 1, take the distances to points in the miter lines 3″, 4″, 5″, 6″, 7″, 8″ and 9″ and place them on lines having similar numbers in Fig. 3, measuring in each and every instance from the line A C, as shown by points 3′, 4′, 5, 6′, 7′, 8′ and 9′. Trace a line through points thus obtained, as shown by 9′, 5, 3′. Trace the cut opposite the line F A, as shown by 9′ 5′ 3″. Then will D H 3″ 5′ 9′ 5 3′ I E be the pattern for the opening to be cut in the sides of the roof.

For the opening in the front of the roof draw the vertical line A C^1, equal to A^1 C^1 in side elevation in Fig. 1. Take the distance X H^1 in plan and place it as shown by C^1 I^1 and C^1 H^1 in Fig. 3, at right angles to C^1 A.

Draw lines from H^1 to A and A to I^1, which is the

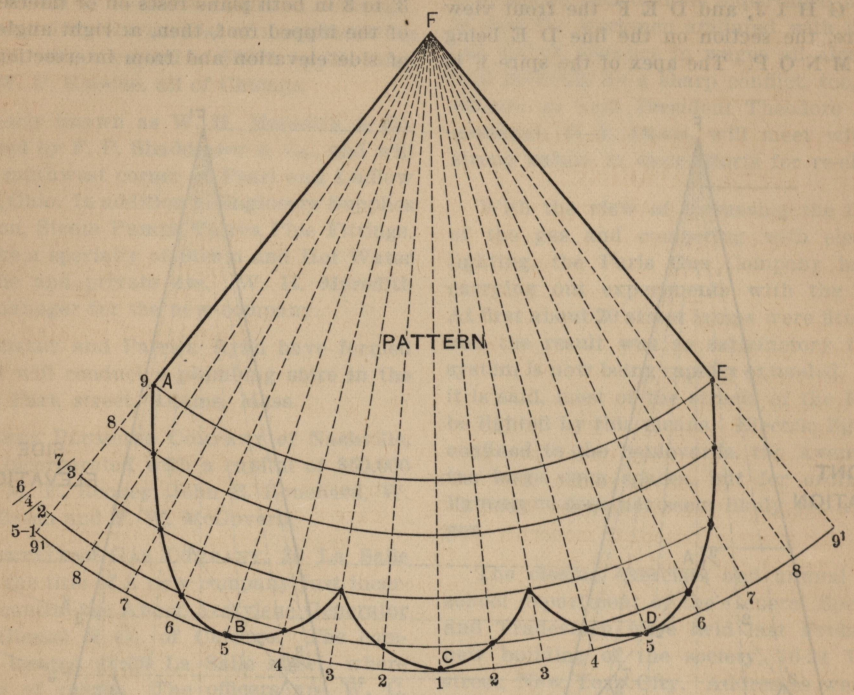


Fig. 2.—Pattern Shape for Spire.

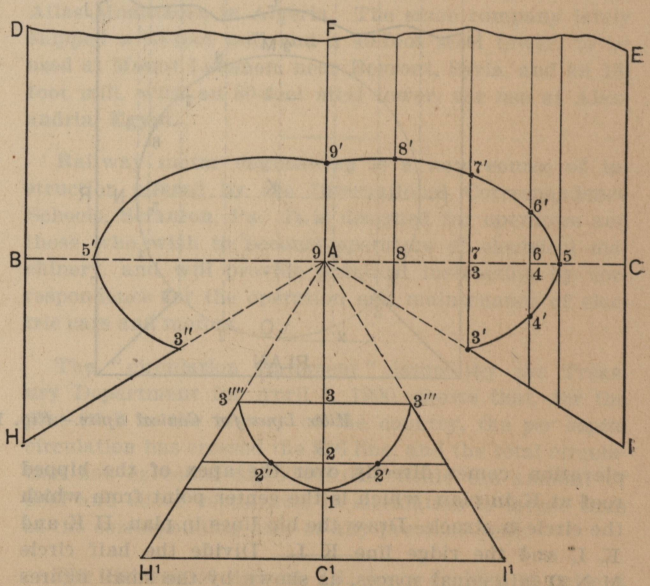


Fig. 3.—Pattern for Opening in Roof.

pattern for the front of roof, minus the opening. Take the distance in side elevation in Fig. 1 from C^1 to 1, 2 and 3 and place it, as shown in Fig. 3, from C^1 to 1, 2 and 3 on the line C^1 A. At right angles to C^1 A and through points 2 and 3 draw lines, as shown. Now, measuring from the line X K^1 in plan in side view in Fig. 1, take the distances to points 2″ and 3″ in the miter line and place in Fig. 3, measuring from the line A C^1 right and left to lines of similar numbers, as shown by points 2′ and 2″ and 3‴ and 3⁗, respectively. Trace a line through these points. Then will 3⁗ H^1 I^1 3‴ 1 be the pattern for the front part of hipped roof.

W. DEWEES WOOD PLANTS ADDED TO SHEET STEEL COMBINE.

Negotiations have been closed by which the American Sheet Steel Company will take over on May 1 the plant of the W. Dewees Wood Company, at McKeesport, Pa.; also the plant of the Wellsville Plate & Sheet Iron Company, at Wellsville, Ohio, which is a W. Dewees Wood interest, and the site and some machinery contracts for the proposed Bessemer steel plant to be erected by the Woodson Steel Company on the Monongahela River, above McKeesport. The McKeesport plant will continue to be operated under the present name, but the entire output will be sold to the American Sheet Steel Company. The W. Dewees Wood Company have had for years a practical monopoly in the manufacture of patent planished iron for locomotive jackets and the bodies of hard coal stoves. The business has been exceedingly profitable, and the fact that the American Sheet Steel Company have succeeded in taking over all the Wood interests will make the position of that concern in the sheet trade very much stronger.

One of the most important features in connection with the deal is that the Woodson Steel Company, organized three or four years ago by the late W. Dewees Wood, will be sold with the Wood plants. The Woodson Steel Company own 288 acres of land fronting on the Monongahela River, and had they not sold their plants it is probable a modern Bessemer Steel plant of from 1000 to 1200 tons capacity per day would have been erected. Contracts for a very large part of the machinery for this new plant had been placed and it was expected to have it in operation by the summer of next year.

The W. Dewees Wood Company's manufacturing business was established at McKeesport in 1851 by the late W. Dewees Wood, and the small works built at that date grew rapidly until it became one of the largest in the Monongahela Valley. Its annual capacity is between 12,000 and 15,000 tons of patent planished iron. Over $1,000,000 is invested and 1000 men are employed. Mr. Wood died on January 2 last, since which time his sons, Alan W. Wood and Richard G. Wood, have been at the head of the W. Dewees Wood Company, and his son-in-law, Persifor Smith, has been president of the Wellsville Plate & Sheet Company.

Ornamental Steel Ceiling and Siding.

We have received from W. J. Burton & Co., 164-166 West Larned street, Detroit, Mich., a copy of their new catalogue of ornamental steel ceiling and side wall finish, brief announcement of the preparation of which appeared in these columns a short time ago. It is a volume of 68 pages, profusely illustrated, with well executed engravings, many of which are direct reproductions from photographs of the finished goods, and is bound in paper covers of neat design. The pages are of a large size, permitting the use of cuts of liberal proportions, some of which occupy the entire page, while in many instances the pages carry groups of smaller cuts. The publication is known as Catalogue E, and shows a great variety of designs for ceiling and siding, moldings, cornices, girder coverings and wainscoting, together with full directions for applying the same. The volume is carefully printed and shows in its make up an attention to details which the trade cannot fail to appreciate.

The Albany Master Roofers' and Sheet Metal Workers' Association.

Secretary William R. Hood informs us that the master roofers and sheet metal workers of Albany, N. Y., have formed an organization for social and commercial purposes, under the title of the Master Roofers' and Sheet Metal Workers' Association. The membership embraces the leading shops in the city, and the association is founded on lines that will make it a permanent adjunct to organizations in the Capital City. The officers elected are:

President, John B. McNee, 59 Broadway.
Vice-President, John B. Hoffman.
Treasurer, James J. Gorman.
Secretary, William R. Hood, 115 Hamilton street.

Aluminum Coated Sheets.

Ground has been broken at Connellsville, Pa., for the new plant which will be built there by the Steel & Iron Aluminum Coating Company. This enterprise has hitherto been located at West Chicago, Ill., but will now be transplanted to Pennsylvania. The new company will have a capital of $500,000 and will thus be in a position to engage much more extensively in the business than was done at West Chicago. The product of the company is aluminum coated sheets for roofing and kindred purposes. At West Chicago the black sheets used were bought from other manufacturers, and thus the company did not control their product from the beginning. At Connellsville it is the intention to manufacture the black sheets and thus cover the entire process of manufacturing the sheets ready for the market. The buildings are to be of a most substantial character, constructed of brick and iron and, it is expected, will have a capacity of 10 tons of finished product in 24 hours. The finishing department will be started temporarily on black sheets purchased from other manufacturers, but it is the intention of the company to have the entire plant completed and running to its full capacity by next fall. George J. Humbert is president; William G. Wilder, vice-president; Thomas Walkup, secretary, and William H. Kirchoff, treasurer.

FLASHINGS.

The Dumond, Babcock & Kingston Company of Rochester, N. Y., have been incorporated with a capital of $15,000, to manufacture Architectural Sheet Metal Work, Roofing, &c. A. M. Dumond and A. B. Babcock are directors of the concern.

J. W. Roberts of Tampa, Fla., is about to establish a Sheet Metal and Cornice works in that city, and has placed contracts for the necessary machinery.

The National Iron Roofing Association held a meeting at Cincinnati, Ohio, on April 12, with G. E. Needham of Cleveland, Ohio, as chairman. The subject of the changed condition of trade consequent upon the consolidation of the Sheet mills was thoroughly discussed. A committee was appointed to investigate the situation in its relation to Roofing manufacture, and to report at the next meeting. Twenty firms were represented at the meeting.

J. K. Smith, Waterbury, Conn., the well-known roofing contractor, has the contract for roofing a fine residence which George Mertz's Sons are building in Barnardsville, N. J. Among contracts for roofing lately taken by Mr. Smith are those for the plants of the W. L. Gilbert Clock Company and the Winsted Hosiery Company. He has just completed roofing a large factory in Rome, N. Y., for the Rome Brass & Copper Company.

THE ACME SHEET METAL COMPANY have been organized at Martin's Ferry, Ohio, to manufacture a line of Stamped Steel Ceilings, Metal Roofing, Galvanized Cornices and Architectural Sheet Metal Work generally.

IT IS REPORTED as not unlikely that the equipment of a number of the smaller Sheet mills belonging to the American Steel Sheet Company will be moved to Vandergrift, Pa., where the largest Sheet mill plant in the world, formerly operated by the Apollo Iron & Steel Company, is located. President George G. McMurtry is understood to favor this policy.

AN ILLUSTRATED folder sent out by the Berger Mfg. Company, Canton, Ohio, calls attention to some of the firm's roofing specialties, including Berger's Eaves Trough, Miters, Ends and Drops, Corrugated Round Expanding Conductor, Plain Round Lock Seam Pipe, Corrugated Round Elbows and Shoes, O. H. Elbows and Shoes, Imperial and Perfection Eaves Trough Hangers, Perfection Rain Water Cut Off, Buckeye, Louvre and World Ventilators, Galvanized Iron Skylights, Metallic Cresting Blocks, Round Ridge Roll, V Angle Ridge Cap and Nonpareil Continuous Roofing Tin, the last named put up in rolls of 100 square feet in patent packages, and manufactured exclusively by the Berger Mfg. Company.

THE YOUNGSTOWN IRON & STEEL ROOFING COMPANY, Youngstown, Ohio, manufacturers of Iron and Steel Roofing and Siding, Sheet and Expanded Metal Lath, Bridge and Fire Proof Flooring, are obliged on account of the great increase in their business to provide additional office room for an increased clerical force. They are having an excellent run of business and regard the prospects as very bright. Their Buckeye system of Flooring and Fire Proofing is in great demand, and is fast being recognized by architects and builders throughout the country. They are also having an excellent call for their Corrugated Iron, Union Metal Corner Bead and Expanded Metal Lath, and, in fact, are doing a very large trade in all their products.

THE AMERICAN SHEET STEEL COMPANY, whose main office is in Battery Park Building, New York, have made a partial appointment of sales agents to represent them in different parts of the country. The list as far as made up is as follows: W. E. Stockton and E. C. Brainard, Chicago; W. J. Wetstein and John A. Good, St. Louis; S. J. Waterman, formerly of Good & Waterman, St. Louis, at Cincinnati, Ohio; S. L. Mitchel, New Orleans; Hoge & Swift, Portland, Ore.; W. T. Shannon, Chattanooga, Tenn.

SCRAP.

A BRITISH consular report states that the high value now prevailing for Tin has greatly stimulated the Tin mining industry in Bolivia, especially in the Myuni district. The climate and the difficulties of transport, however, seriously interefere with successful mining operations.

A WASHINGTON, PA., dispatch reports that a representative of Pittsburgh capitalists was at West Alexander, near Washington, this week, negotiating for a site for a Tin Plate mill.

A DISCOVERY of Tin Ore on Ten-mile Creek, Australia, about 30 miles from Croydon, Queensland, has been reported, assays made by the Mines Department showing 44 per cent. of Tin. It is thought that the discovery is likely to be a valuable one.

THE BRITISH BOARD OF TRADE returns for the month of March, 1900, show shipments of Tin Plates from the United Kingdom to the United States during the month amounting to 5137 tons, as compared with 4302 tons in February. This brings the total exports of Welsh Tin Plates to this country in the first quarter of 1900 up to 15,623 tons, as compared with 10,536 tons in the first three months of last year, an increase of nearly 50 per cent. The shipments of Black Plates for tinning from England to the United States increased from 63 tons in the first quarter of 1899 to 688 tons in the quarter ended March 31 last.

TRADE NOTES.

THE MOUND CITY MFG. & ENAMELING COMPANY of St. Louis, Mo., have been incorporated by H. Quellmalz, H. V. Wickham, R. Schulenburg and others, with a capital of $25,000, to manufacture wares in Tin, Sheet Iron, &c.

THE PLUME & ATWOOD COMPANY of New York City have been incorporated with a capital of $10,000, to deal in Metal Goods. The directors are: David S. Plume and E. M. Bussell of Waterbury, Conn., and James F. Daley of Brooklyn, N. Y.

THE plant of the Atlas Mfg. Company, manufacturers of Step Ladders, Clothes Racks and other House Furnishing Goods, at Danville, Pa., was destroyed by fire recently, with a loss of $15,000, partly covered by insurance.

C. A. CHAPMAN of Syracuse, N. Y., will remove his Coke Tin manufacturing plant to Somerville, N. J.

THE OWENS BRASS & COPPER WORKS of Chicago have removed their plant from 53 North Desplaines street to 188 to 190 North Union street, where they are in possession of much larger and more convenient quarters. The concern are equipped for work of all kinds in the line of Brass and Aluminum Castings, &c.

THE H. C. FAHRIG ALUMINUM COMPANY have been organized at Ashland, Wis.

WE ARE ADVISED by the firm of Herm. Weissenburger & Co., Cannstatt, Germany, that they control a number of valuable patents connected with Aluminum. Among them is one for cold plating on Aluminum, another for test dipping of the metal in Tin and Lead; also for a good Solder fluid that allows the soldering of Aluminum with pure Tin; a plating process without electricity and other important processes. The firm invite persons from the United States interested in the subject, who purpose visiting the Paris Exposition, to communicate with them so as to arrange a meeting, either in Paris or at Cannstatt. They also claim to possess a good and cheap plating process on Iron, which makes it absolutely rust proof.

FAMOUS MFG. COMPANY, Randolph and Canal streets, Chicago, Ill., who are manufacturers of the Chicago Washer, are selling this article to the retail trade exclusively. In carrying out this policy they advise us that a short time since they declined an order for 500 of these machines from a catalogue house, and a similar order from a jobbing house. They advise us that they sell to but one retail dealer in each town, and will protect him by refusing to fill orders from jobbing houses, department stores, or catalogue houses—a position which they are confident is advantageous for both manufacturer and retailer.

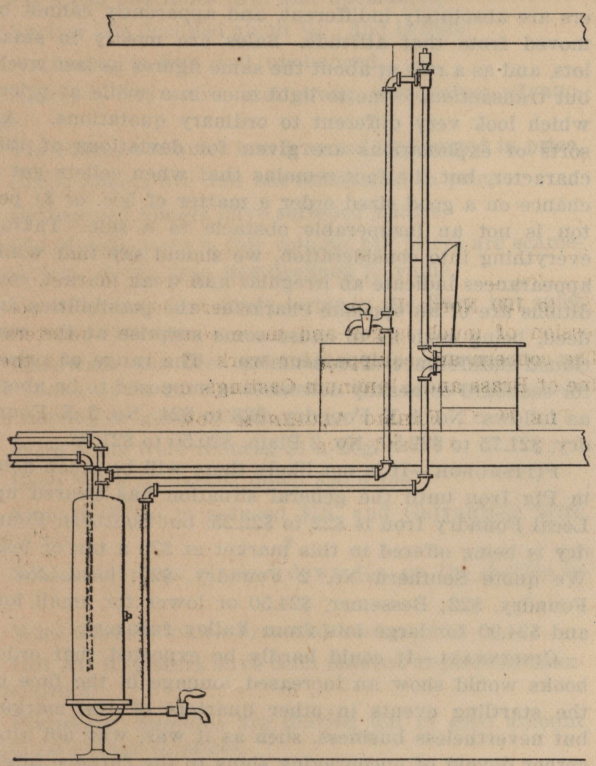
THE HOMESTEAD VALVE MFG. COMPANY have removed their plant from Homestead, Pa., to 107 Wood street, Pittsburgh, having disposed of their property at Homestead to the Carnegie Company. Frederick Schuchman is president of the company and William Tunstall secretary. As most of the company's product is sold in less than carloads and is sent to all parts of the country, it was found that Pittsburgh offered better advantages, both in rates and shipping facilities, for their special business.

The Joseph Dixon Crucible Company, Jersey City, N. J., are calling the attention of the trade to the special merits of their silica-graphite paint as a durable protective paint for smokestacks. It is a severe test for paint when a metal surface is exposed to the combined influences of both great degrees of heat and climatic conditions, but this company cite several striking examples of endurance and durability, showing that they have succeeded remarkably well in meeting the requirements necessary.

THE LETTER BOX.

BOILER BELOW WATER BACK.

From H. S., Morrison, Ill.—It appears that "H. R.," whose letter appears in *The Metal Worker* of April 7, was more intent on pleasing his customer than on conforming to nature's laws when he put in the job described. The boiler



Boiler Below Water Back.—Fig. 1.—Suggestion of "H. S.," Showing Piping Arrangement.

ought by all means to be set near the range, to prevent the loss of a large amount of heat incident to the long circulating pipe, and there is not shown any provision for relieving the water back of air, and it certainly must become air bound. I would advise him to place the boiler in the kitchen close to the range, but if the owner will not consent to this, he should connect the range as

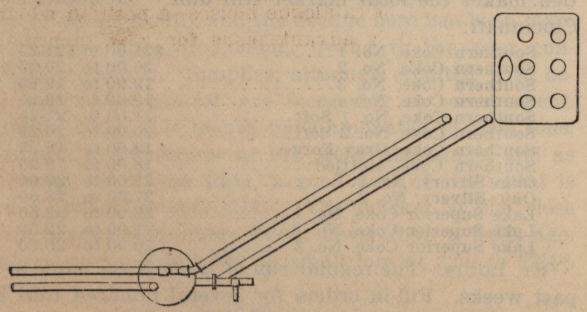
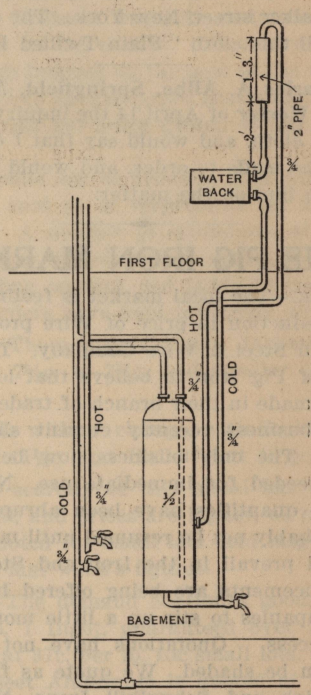


Fig. 2.—Plan Showing How to Avoid Elbows.

shown in Fig. 1, running the flow pipe from the water back up to near the ceiling, connected with a tee having an automatic air valve on the top. The pipe should run from the tee through the partition, down on the other side behind the sink, with a tee on it for the sink faucet, and then on to the top of the boiler. By running direct from the range to the boiler, as shown by plan in Fig. 2, several elbows can be avoided and a better circulation secured. Both pipes should have a pitch all the way from the boiler. If the flow and return pipes were both made 1 inch in size and the brass boiler connections taken out it would no doubt insure more free circulation.

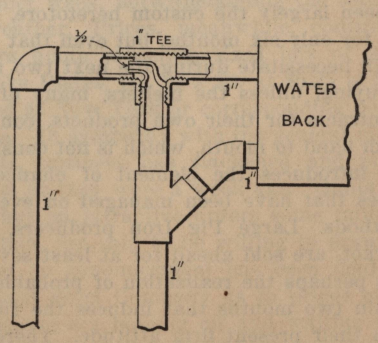
From E. E. J., Chattanooga, Tenn.—For the assistance of "H. R.," whose inquiry appeared in *The Metal Worker* April 7, asking the proper method of connecting a range located on the first floor with a boiler in the basement, I submit herewith a sketch which is largely self explanatory, and if the range is connected accordingly it will give satisfactory results. The pipe from the water back should run up and connect with a piece of 2-inch pipe 15 inches long near the ceiling of the kitchen, from which a pipe should be taken out and carried down



Boiler Below Water Back.—Suggestion of "E. E. J."

to the boiler and connected at the side opening. An air valve should be put in the bend at the top of the 2-inch pipe to prevent the system becoming air bound. The 2-inch pipe makes a place for the hot water in the water back to flow to and thus induces a circulation that would not otherwise occur.

From H. C. E., Wilmington, Del.—For the benefit of "H. R.," who asks for assistance in *The Metal Worker*,



Boiler Below Water Back.—Suggestion of "H. C. E."

April 7, to get circulation through a bath boiler in a cellar which does not heat, would recommend the use of a device constructed as shown in the sketch herewith, and

I think he will be satisfied. It can be made of ½-inch gas pipe, and with any movement of water from the water back will tend to improve the circulation.

MOLESKIN CLOTHS.

From J. E. G.—Replying to "H. J. D.," in *The Metal Worker* April 14, will say that according to the writer's experience moleskin cloth is rather hard to obtain. He has asked for it in many stores and wholesale houses in different cities, but never actually found the goods of the proper quality but once. Some years ago, while the writer was working in New York City, he needed new cloths for wiping, and as the cloths sold by the supply houses are no good, because they are sewed so that the stitches are exposed on one edge and the solder hangs in the stitches, and because one side of the cloth is stiff, on account of the way it is sewed, and the cloth folded wrong to begin with, he set out with the hope of finding "mole skin" in some of the stores of the wholesale dry goods district. After visiting some 20 stores the proper grade of cloth was found in the store of John McCann & Co., 52-54 Walker street, New York. The dry goods men, I believe, call this cloth "Plain Twilled Fustian."

From Charles A. Allbe, Springfield, Mass.—I notice in *The Metal Worker* of April 14 the inquiry of "H. J. D." for moleskin cloth, and would say that I can furnish the cloth or cloths made to order, and would be glad to correspond with him on the matter.

THE PIG IRON MARKET.

NEW YORK.—The local market is feeling the effect of the heavy reduction in price of Wire products made by the American Steel & Wire Company. This has caused consumers of Pig Iron to believe that lower prices are likely to be made in their branch of trade, and the small volume of business recently current shows a further diminution. The only business now being done is in small lots needed for immediate use. Negotiations for considerable quantities have been abruptly terminated, and will probably not be resumed until more settled conditions shall prevail in the Iron and Steel trades generally. Inducements are being offered by some of the furnace companies to stir up a little more business but without success. Quotations have not been reduced, but they can be shaded. We quote as follows, at tidewater: Lehigh and Schuylkill Irons, No. 1 Foundry, $22.75 to $23.75; No. 2 X, $21.25 to $22.25; No. 2 Plain, $20.25 to $21.25. Southern brands are quoted as follows: No. 1 Foundry, $22.50 to $23; No. 2 Foundry, $21.25 to $21.75; No. 1 Soft, $22.50 to $23; No. 2 Soft, $21.25 to $21.75; No. 3 Foundry, $21 to $21.50.

CHICAGO.—There is the same urgency of request for deliveries of Pig Iron on old contracts. For the year beginning July 1, it is estimated by prominent factors to the trade that there will be need in this market for 500,000 tons of Foundry Iron, practically none of which has yet been bought. Instead of buying for a year ahead, as has been largely the custom heretofore, melters may contract for only six months, but even that reduced purchase will necessitate during the next two months quite active buying, unless the melters, many of whom take large contracts for their own products, continue to buy only from hand to mouth, which is not considered likely, since it introduces the element of chance into many businesses that have been managed on every conservative methods. Large Pig Iron producers, who supply this market, are sold ahead for at least several months, and it is perhaps the realization of probable heavy buying within two months that induces the furnacemen to maintain their present firm attitude. There is no large quantity of Iron procurable for early shipments. Most sellers describe the market as quiet. We quote for cash as follows:

Lake Superior Charcoal	$25.50 to $26.00
Local Coke Foundry, No. 1	23.50 to 24.00
Local Coke Foundry, No. 2	23.00 to 23.50
Local Coke Foundry, No. 3	22.50 to 23.00
Local Scotch, No. 1	25.00 to 25.50
Ohio Strong Softeners, No. 1	24.00 to 24.50
Southern Silvery, according to Silicon	25.50 to 27.00
Southern Coke, No. 1	22.85 to 23.35
Southern Coke, No. 2	21.85 to 22.35
Southern Coke, No. 3	20.85 to 21.35
Southern Coke, No. 1 Soft	22.85 to 23.35
Southern Coke, No. 2 Soft	21.85 to 22.85

PHILADELPHIA.—There is practically no change from the conditions noted in our last report Considering the very large output which is being made, and the apparently small increase in stocks, consumption must be large, although there is no buying to warrant assumptions of that kind. It is supposed, however, that deliveries on old contracts explains the anomaly, although the continued dullness is discouraging in the extreme, but buyers are absolutely indifferent, and apparently cannot be moved from that attitude. Sales are mostly in small lots, and as a rule at about the same figures as last week, but transactions come to light once in a while at prices which look very different to ordinary quotations. All sorts of explanations are given for deviations of this character, but the fact remains that when sellers get a chance on a good sized order a matter of 50c. or $1 per ton is not an insuperable obstacle to a sale. Taking everything into consideration, we should say that while appearances indicate an irregular and weak market, conditions are of an opposite character, the possibilities, indeed, being such as to cause some surprise at the continued indifference of consumers. The range of prices for seaboard or nearby deliveries is supposed to be about as follows: No. 1 X Foundry, $23 to $24; No. 2 X Foundry, $21.75 to $22.50; No. 2 Plain, $20.50 to $21.50.

PITTSBURGH.—It is not likely there will be much done in Pig Iron until the general situation has cleared up. Local Foundry Iron is $22 to $22.25, but Southern Foundry is being offered in this market at $20 a ton or less. We quote Southern No. 2 Foundry, $20; local, No. 2 Foundry, $22; Bessemer, $24.50 or lower for small lots and $24.90 for large lots from Valley furnaces.

CINCINNATI.—It could hardly be expected that order books would show an increased tonnage in the face of the startling events in other quarters of the market, but nevertheless business, such as it was, was not altogether devoid of encouraging signs to the furnace interests. The character of the orders and the sources from which they originated show beyond question that the buyers were nearing the end of their stock piles and were covering present needs and at the same time waiting for developments before buying more liberally. It is not beyond the probable that Iron may go a little lower during the next week, but that there will be anything like a sharp decline seems at this writing altogether improbable. The fact that the labor troubles in foundry and machine circles in this immediate section are not settled makes the local market still dull. We quote, f.o.b. Cincinnati:

Southern Coke, No. 1	$21.00 to $21.25
Southern Coke, No. 2	20.00 to 20.25
Southern Coke, No. 3	19.00 to 19.25
Southern Coke, No. 4	18.00 to 18.25
Southern Coke, No. 1 Soft	21.00 to 21.25
Southern Coke, No. 2 Soft	20.00 to 20.25
Southern Coke, Gray Forge	18.00 to 18.25
Southern Coke, Mottled	18.00 to 18.25
Ohio Silvery, No. 1	28.00 to 29.00
Ohio Silvery, No. 2	27.00 to 28.00
Lake Superior Coke, No. 1	22.00 to 22.50
Lake Superior Coke, No. 2	21.00 to 22.50
Lake Superior Coke, No. 3	20.00 to 20.50

ST. LOUIS.—The regular run of trade is the same as in past weeks. Fill-in orders for several hundred tons are constantly being presented. Favored furnaces are still under strain to make deliveries and the operators claim it folly to expect reduced prices under such conditions. Southern furnaces have again closed a significant deal for 25,000 tons for export shipment to be made during the last half of this year. Representatives say that the trade has undeniably been affected during the past few days by the recent action in Wire circles, and that renewed buying may be deferred for several weeks. We quote on cars, St. Louis:

Southern, No. 1 Foundry	$21.75 to $22.00
Southern, No. 2 Foundry	21.25 to 21.50
Southern, No. 3 Foundry	20.00 to 20.25
No. 1 Soft	21.75 to 22.00
No. 2 Soft	21.00 to 21.25

TRADE REPORT.

MARKET SUMMARY.

Pig Tin is weak and about 1c. lower.

Copper remains firm and in good demand, with Casting a trifle higher.

Pig Lead continues firm and unchanged.

Spelter has declined about ⅛c., and is dull.

Antimony is firm and unchanged.

Nickel is very scarce and strong, with values advancing.

Tin Plates are quiet but firm and unchanged in price.

Black Sheets are dull but unchanged in price.

Galvanized Sheets have softened a little.

Old Metals move in fair volume, but prices are scarcely strong. Scrap Iron has declined in value.

Foundry Iron is a shade lower in the East, but sales show some increase.

Hardware has been affected rather unfavorably by the shake up in the Iron market, but seasonable goods are moving in good volume.

Wire Nails were reduced $1 a keg.

Barb Wire is marked down $20 a ton.

Smooth Wire is reduced $18, and Galvanized Wire $20 a ton.

Solder has been marked down ½c. on the decline in Tin.

Wire Cloth remains firm and unchanged.

Hot Air Registers have been reduced in price by manufacturers.

Plumbers' Supplies are moving out in good amount with no change in prices.

Enameled Bathtubs are in active demand, and prices are very firm.

Spirits Turpentine has declined 3c. a gallon.

METAL MARKET.

Pig Tin.—The market during the week has been a dull and declining one. Transactions were on a very conservative scale, neither consumers nor dealers buying beyond the limits of their immediate requirements. Prices have dropped steadily and the decline here has been more than double that of London, owing to the poor consumptive demand. Supplies, although credited with being well under control, are increasing to some extent. Arrivals so far this month have amounted to 2563 tons, according to the figures of the Metal Exchange, and as deliveries have been light, a good deal of the metal is said to be going into store. The market at the close of the week ruled about 1 cent lower than a week ago. Jobbers quote Straits Pig in small lots at 32c. to 32½c. per lb.

Copper.—The demand is fairly active, with prices very firm at the figures given in our last report. A good volume of business was transacted on both domestic and foreign account, but there was some slackening in the demand at the close of the week. The London market has stiffened somewhat. Small lots of Lake Ingot are quoted at 18c. to 18¼c. per lb., and Ansonia Grade Casting Copper at about 17¾c.

Sheet Copper.—There is a marked absence of new business. Consumers appear to partake of the nervousness which has invaded the metal market consequent upon the disturbance in the Iron trade. Buying is very conservative and strictly limited to present needs. Prices show no quotable change, but there are traces of concessions being offered in some quarters on desirable orders. Jobbers are generally quoting Sheet Copper in small lots at 20½c., and this remains the ruling rate.

Pig Lead.—The market remains unchanged and firm as to prices. There is a steady, but not especially heavy, consumptive demand and the volume of business seems a little larger, if anything. Prices are quite steady at 5⅛c. to 5¼c. for small lots of American Pig.

St. Louis advices are as follows: Pig Lead is in light demand, but prices for Chemical are said to be stiffer. Buyers took this grade pretty freely at opening of the month, but sales are now light.

Spelter.—This metal has declined again and closed dull and weak. Business was only moderate, consumers taking but little on the decline. There are indications, however, of more interest on the part of the Galvanizing trade. Retail prices have softened somewhat, good Western brands in small lots being quoted at 5⅛c. to 5¼c per lb.

St. Louis advices are as follows: The disquiet in the Iron market is said to be responsible for a backset to Spelter values. A number of quotations at 10c. below last week's figures in response to direct inquiries were made by a leading smelter, but failed to land the business. Export orders have kept producers well sold up.

Sheet Zinc.—There is no change. Jobbers quote 600-lb. cask lots at 7⅝c. to 7¾c. and smaller quantities at 8c. per lb.

Antimony —Is without change, with Cookson's quoted in small lots at 11¼c. and Hallett's at 10½c. per lb.

Nickel.—The scarcity of this metal has become still more pronounced, and prices are higher, as much as 50c. per lb. being quoted for small lots, and larger lots from 4c. to 8c. above last week's figures.

Aluminum.—The demand continues good, and prices unchanged. No. 1 Ingot, guaranteed over 99 per cent. pure, is quoted at 37c. per lb. for small lots, and 35c. for 100-lb. lots. Sheet Aluminum is quoted at 42c. per lb., base, net, for quantities under 100 lbs.

Tin Plates.—There is a merely fair amount of new business being done outside of ordinary jobbing trade. Canners' and Can makers' demands are light, their requirements for the next two or three months being well supplied. Mills are all in full work, and deliveries on old contracts are heavy, but the volume of new orders is quite moderate, and spot business seems to have been checked to an appreciable extent by the shaking of confidence in the Iron market. This influence is seen even in the retail Tin Plate trade, jobbers reporting a disappointingly quiet week, notwithstanding the setting in of favorable weather. Prices, meanwhile, continue quite firm. Jobbers quote moderate sized lots of American Bessemer Coke Plates, IC, 14 x 20, at $5.25 to $5.30 per box, delivered at New York or corresponding point.

Sheet Iron.—In sympathy with the general market for Iron products, business has slackened and prices are hardly as firm as they were a week ago. Quotations are unchanged, but on attractive orders some mills, not in the combination, are said to be willing to grant concessions. As yet no announcement has been made by the American Sheet Steel Company as to prices of Sheets. Buyers in general are holding off and waiting until the situation is clearer. Jobbers quote small lots of No. 27 Black Sheets at 3.55c. Galvanized Sheets have softened a shade and are now quoted at 70 to 70 and 2½ per cent. off the list.

Chicago advices are as follows: There are no indications of weakness and current trade, while consisting in

the main of small orders, aggregates a large volume. The market seems to be getting free from stocks of irregular quotation, and the interest manifested in some other lines does not extend to Sheets. From store No. 27 is quoted at 3.55c. Galvanized is unchanged at 70 per cent. from store.

Old Metals.—There is a fair demand reported, but offerings are still ahead of purchases, and the market, as a whole, presents a weaker appearance. Scrap Iron has declined. Dealers quote about the following buying prices for moderate sized lots delivered in New York or corresponding points:

Heavy Copper	per lb. 15 c.
Light and Tinned Copper	per lb. 14 c.
Heavy Brass	per lb. 10¼c.
Light Brass	per lb. 8½c.
Lead	per lb. 4¼c.
Tea Lead	per lb. 3¾c.
Zinc	per lb. 3¼c.
No. 1 Pewter	per lb. 17c.
No. 2 Pewter	per lb. 9c.
Tin Plate Scrap, per gross ton	$7.00
Wrought Iron Scrap, per gross ton	12.50 to 12.75
Heavy Cast Scrap, per gross ton	11.50 to 11.75
Stove Plate Scrap, per gross ton	7.00 to 7.25
Burnt Iron, per gross ton	6.25 to 6.50

CHICAGO REPORT.

Scrap Iron and Steel.—Dealers report a fair demand, but are allowing their stocks to run down, as prices indicate a downward tendency. Dealers quote buying prices as follows for full carloads:

	Per net ton.
Country Wrought Scrap	$12.75 to $13.00
Machinery Cast	11.50 to 12.00
Malleable Cast	12.50 to 12.75
Stove Plate (free from burnt)	7.25 to 7.50
Burnt Iron and Grate Bars	6.50 to 6.75
Sheet Iron and Hoops	7.00
Plow Steel and Breaking Stock	10.25
No. 2, such as Shovels, Hoes, &c	7.00
Old Boilers—whole (Iron)	9.00
Old Boilers (Iron)—cut in single Sheets and Rings	12.50
Old Gas Pipe and Boiler Tubes	$10.00 to 10.25
Cast Borings	8.50
Turnings	$10.00 to 10.25
Horseshoes	14.00

Old Metals.—The demand is light and prices are practically unchanged, with the exception of Red and Yellow Brass, which are a trifle lower. Dealers quote buying prices on small lots as follows, delivery on cars, Chicago:

	Per lb.
Copper Wire and Heavy	14⅜c. to 14½c.
Copper Bottoms	13 c. to 13⅛c.
Copper Clips	14 c.
Red Brass	13⅛c.
Yellow Brass	10⅛c.
Red Brass Borings	11¾c.
Yellow Brass Borings	9 c.
Light Brass	7½c. to 7¾c.
Pipe Lead	4⅛c.
Tea Lead	3½c.
Zinc	3¼c.

Old Rubber.—

	Per net ton.	Per lb.
Garden Hose	$30.00	.....
Air Brake Hose	45.00	.....
Rubber Shoes	....	6.25c.
Rubber Car Springs, &c	....	5¼c.
Inside Bicycle Tubing	....	20½c.
Outside Tubing	....	6½c.

Anthracite Coal.—Demand fair at unchanged prices.

	Grate.	Egg and Stove.
Chicago, Ill	$5.50	$5.75
Milwaukee, Wis	5.50	5.75
St. Louis	6.00	6.25
Kansas City, Mo	8.00	8.25

The Philadelphia Commercial Museum, 233 South Fourth street, Philadelphia, has issued a pamphlet containing conversion tables of weights and measures and foreign moneys. This pamphlet comprises 32 pages, and represents a great deal of labor in compiling the methods of converting foreign commercial units into those used in the United States and *vice versa*. The pamphlet is published for free distribution to American manufacturers, in furtherance of the work of the institution, which is solely that of fostering American export trade.

THE HARDWARE TRADE.

THE interest of the trade has for the past week centered on the Wire and Wire Nail market, in connection with the announcement of a reduction in prices ranging from $18 to $20 per ton. The trade were entirely unprepared for this action and it had a depressing effect, relating as it did to important lines and opening the question as to the stability of prices for raw material and manufactured products generally. The result has been that business has been seriously checked, buyers holding off to await developments. The situation, so far as it relates to the lines immediately concerned—Wire Nails and Wire—is referred to under Notes on Prices, as well as the important question as to the extent to which the trade will avail themselves of the opportunity to purchase the goods at the new prices. The feeling seems to be gaining ground that a good many Nails will be bought at the new prices and that the trade will regard with approval the putting of these goods on a lower level, as the prices have long been considered unreasonably high. After the temporary disturbance which results from so radical a reduction it is hoped that things will move along in regular channels. Meanwhile the market on other heavy goods, owing to the indications of weakness shown in Iron, has not a very confident tone, but declines in prices are not as yet important. The course of the Iron market will be closely watched and its developments awaited with special interest and solicitude. The large volume of current business and the great consumption which is going on constantly, together with the general prosperity of the country, are features of the situation which tend to reassure the trade. In view of the effect on the market of the action of the American Steel & Wire Company the jobbers are free in expressions of disapproval, and it is intimated that their association will perhaps make a claim upon the company for an allowance on Nails and Wire in their hands when the reduction in price was made. On what ground such claim would be based is not stated. The course of things under review affords a forcible illustration of the disadvantage, so far as the welfare of the trade at large is concerned, of radical advances in prices made possible for a while by apparent control of the market. This is a lesson which might well be heeded by other manufacturers whose prices have been unreasonably advanced. The disfavor of the retail trade throughout the country and of consumers is a very serious obstacle in the way of the success of manufacturers, or of combinations of manufacturers, even though they appear for a time to have the trade in their power. A day of reckoning is pretty sure to come. Fortunately such lines in the Hardware field are comparatively few, manufacturers generally having shown a conservative disposition and not advancing prices more than was reasonably justified. In the present juncture of things the wisdom of this policy is receiving an impressive demonstration.

NOTES ON PRICES.

Plumbers' Supplies.—Notwithstanding a hesitancy which has been developed in building operations, consequent upon the disturbance in the Iron trade and the strikes in some quarters, the demand for Plumbers' Supplies in this locality has been quite brisk during the past week. The setting in of mild weather, with the advance of the season, seems to have stimulated business and jobbing houses are handling a very fair volume of orders. Prices show no quotable change, but remain pretty firm throughout the list.

Enameled Kitchen Sinks.—Under date of April 21 the Standard Mfg. Company, Pittsburgh, Pa., withdraw all previous prices and quotations on 30 x 18 inch Enameled Square Kitchen Sinks, Plate 500 S, and announce that new prices will be quoted upon application.

Enameled Bathtubs.—The few concerns which are manufacturing Enameled Cast Iron Bathtubs and which

are outside of the combination of manufacturers now included in the Standard Sanitary Mfg. Company are finding all the business in this line that they are capable of handling. From information which has reached up we are assured that the output in this branch of business, of these concerns, is entirely sold out for at least two months. This condition of affairs must be gratifying to the Standard Sanitary Mfg. Company, as there is sufficient demand for these goods to enable them to maintain the present price without fear of cutting on the part of the outside manufacturers. It is regarded as impossible for the competitive concerns to quote a price which would take the business away from the Standard Sanitary Mfg. Company and at the same time make satisfactory prompt delivery. At the present time there is claimed to be a daily demand for 400 Enameled Bathtubs, and the three concerns who are not in accord with the combination prices and rulings are not able, in their present state, to manufacture more than 5 per cent. of this demand. Of course, there are two large manufacturing concerns in this line who are not controlled by the combination, but these concerns are acting, as regards prices and delivery, in full accordance with the prices and freight rulings of the Standard Sanitary Mfg. Company.

Hot Air Registers.—At a meeting of the Register Association, held in Cleveland, Ohio, April 18, it was decided to reduce prices on staple sizes of Hot Air Registers. The discounts given below were accordingly adopted as applying to the sales of manufacturers and jobbers. This reduction in price is referred to as leaving but a narrow margin of profit to the manufacturers, considering the present scale of wages and the cost of raw materials. The official statement of schedule of discounts, applying to all sections of the United States, is as follows, terms f.o.b. factory or warehouse, with no freight allowance, except on orders of $10 or over to jobbing points, no freight being allowed by manufacturers on direct shipments to jobbers' customers:

NEW REGISTER SCHEDULE OF TRADE DISCOUNTS.

Applying to Standard Price-List of 1899.

All discounts subject to change without notice. For all sections of the United States, divided into three classes, as below:

SIZES OF REGISTERS, FACES AND BORDERS (subject to special discounts), NOT including Convex, Round and Circular Top.

6 x 6	8 x 8	9 x 14	12 x 16	14 x 20
6 x 8	8 x 10	10 x 12	12 x 17	14 x 22
6 x 9	8 x 12	10 x 14	12 x 18	16 x 20
6 x 10	8 x 15	10 x 16	12 x 19	
7 x 10	9 x 12	12 x 15	14 x 18	

AND THE FOLLOWING SIZES OF REGISTER FACES ONLY.

16 x 24	20 x 24	24 x 24	24 x 32	27 x 38
18 x 24	20 x 26	24 x 27	24 x 36	30 x 30
20 x 20	21 x 29	24 x 30	27 x 27	

General Discounts.

MISSISSIPPI RIVER DISCOUNTS, INCLUDING WEST BANK AND ALL POINTS EAST, ALSO PACIFIC COAST POINTS.

(This is for all sections of the United States excepting Western Jobbing Points No. 1 and Western Jobbing Points No. 2.)

	Per cent.
Black Japanned	50
White Japanned	40
Bronzed Finishes	40
Nickel-Plated	50
Electro-Plated, Brass, Bronze, &c.	40

These discounts apply only to the special list of sizes given above.

DISCOUNTS FOR WESTERN JOBBING POINTS No. 1.

Comprising the following places:

Council Bluffs, Iowa. Aberdeen, S. D.
Springfield, Mo. Norfolk, Neb.
Fort Dodge, Iowa. Lincoln, Neb.
Leavenworth, Kan. Ottumwa, Iowa.
Sioux City, Iowa. Waterloo, Iowa.
Kansas City, Mo. Oskaloosa, Iowa.
Sedalia, Mo. Topeka, Kan.
Des Moines, Iowa. Omaha, Neb.
Atchison, Kan. St. Joseph, Mo.
Marshalltown, Iowa.

	Per cent.
Black Japanned	40 and 10
White Japanned	30 and 10
Bronzed Finishes	30 and 10
Nickel-Plated	40 and 10
Electro-Plated, Brass, Bronze, &c.	30 and 10

These discounts apply only to the special list of sizes given above.

DISCOUNTS FOR WESTERN JOBBING POINTS No. 2.

Comprising the following places:

Wichita, Kan. Butte, Mon.
Denver, Col. Great Falls, Mon.
Ogden, Utah. Pueblo, Col.
Helena, Mon. Salt Lake City, Utah.

	Per cent.
Black Japanned	40
White Japanned	30
Bronzed Finishes	30
Nickel-Plated	40
Electro-Plated, Brass, Bronze, &c.	30

These discounts apply only to the special list of sizes given above.

All Other Sizes, Not Including Convex, Round and Circular Top.

	Per cent.
Black Japanned	30
White Japanned	25
Bronzed Finishes	30
Nickel-Plated	30 and 10
Electro-Plated, Brass, Bronze, &c.	30 and 10

	Per cent.
Black Japanned	20 and 10
White Japanned	20 and 5
Bronzed Finishes	20 and 10
Nickel-Plated	30 and 5
Electro-Plated, Brass, Bronze, &c.	30 and 5

	Per cent.
Black Japanned	20
White Japanned	10 and 5
Bronzed Finishes	20
Nickel-Plated	25 and 5
Electro-Plated, Brass, Bronze, &c.	25 and 5

Convex, Round and Circular Top, All Sizes.

	Per cent.
Black Japanned	40
White Japanned	30
Bronzed Finishes	30
Nickel-Plated	40
Electro-Plated, Brass, Bronze, &c.	30 and 10

	Per cent.
Black Japanned	30 and 10
White Japanned	25
Bronzed Finishes	25
Nickel-Plated	30 and 10
Electro-Plated, Brass, Bronze, &c.	30 and 5

	Per cent.
Black Japanned	30
White Japanned	20
Bronzed Finishes	20
Nickel-Plated	30
Electro-Plated, Brass, Bronze, &c.	30

All Sizes and Styles.

	Per cent.
Wall Frames	30
Ventilating Plates	30
White Porcelain	20
Solid Bronze	20

	Per cent.
Wall Frames	25
Ventilating Plates	25
White Porcelain	20
Solid Bronze	20

	Per cent.
Wall Frames	20
Ventilating Plates	20
White Porcelain	20
Solid Bronze	20

The following discounts are issued on specialties:

	Per cent.
Pedestal Registers	20
Carved Ceiling Ventilators for Churches	25
Dampers	33 1-3
Chandelier Ventilators	25
Summer Pieces	33 1-3
Screens for Steam Pipes	40
Slate Border Frames	50
Soapstone Border Frames	30

Wire Cloth.—The big end of the Wire Cloth trade seems to be about satisfied, but purchases are still being made at the firm price of $1.50.

Solder.—Manufacturers of Solder have reduced prices about ½ cent a pound in sympathy with the decline in Pig Tin. Half and Half guaranteed in small lots from store is quoted by jobbers at 21c. to 22c., and No. 1 at 17c. to 19c.

Wire Nails.—The trade throughout the country were startled on Saturday by the announcement of a heavy reduction in the price of Nails and Wire by the American Steel & Wire Company. The reduction on Wire Nails is $1 per keg. They announce that the reduction in price is made to reduce stock, and is for immediate specifications and prompt shipment only, and subject to withdrawal without notice. It is applicable to all con-

tracts which are unshipped, but no reduction will be made on any goods shipped prior to the date of its announcement. This action has been taken by the company in anticipation that the trade will avail themselves of the opportunity to purchase goods at above prices, and it was deemed advisable to make this sweeping reduction at once rather than attempt to encourage trade or reach a lower basis of prices by gradual concessions. The hope is expressed by many who are interested in the maintenance of the market that the accumulated stocks in the company's warehouses will under this inducement be promptly taken by the trade, and that the lower prices which are thus put within the reach of consumers will induce a much more active demand than has for some time prevailed. It is rather too early as yet to ascertain just how the trade at large will regard this action, so far as it is related to the purchase of the goods in question, but some of the prominent houses are represented to be buying quite freely, deeming tthe purchase a safe one, with the possibility, in the estimation of some, that higher prices may be announced when the manufacturers' stocks are exhausted. Some houses are under the impression that a moderate advance may be announced about May 1, but no official intimation of this is made by the manufacturers.

Jobbers and manufacturers' agents in New York are meeting the cut of $1 per keg in the price of Wire Nails, with the exception of small lots from store. The price that has been ruling on this classification for the past three months or more has been 6 cents per keg less than the price to retailers for less than carloads on dock. It has been decided to charge 15 cents per keg more than dock price, for the convenience of buying Nails from store. The new price for small lots from store is $2.75.

It should be borne in mind that the reductions made by the American Steel & Wire Company refer only to Nails, Barb Wire, Plain Wire, Nos. 0 to 18, and Staples. The other products of the company, including their large line of Wire specialties, are unchanged, former prices being firmly maintained.

Cut Nails.—No change has been made so far by the Eastern Cut Nail Manufacturers, but a meeting of manufacturers, to have been held at the end of this week, was expected to take some action. Meanwhile former quotations rule at this point. Business is very light, in view of expected reduction in price.

Barb Wire.—A reduction of $20 per ton was made on April 21 by the American Steel & Wire Company on Barb Fence Wire, both Galvanized and Painted, Twist Wire and Fence Staples for domestic use. In connection with the reduction on Wire Nails referred to above this reduction in price is made to reduce stocks, and is for immediate specifications and prompt shipment only, and subject to withdrawal without notice. It is anticipated by the company that the trade will purchase freely at the reduced prices, and that the market, though on a lower level, will be in a more healthful and satisfactory condition than for some time.

Plain Wire.—On Plain Annealed Fence Wire, Nos. 0 to 18 inclusive, the American Steel & Wire Company announced, April 21, a reduction of $18 per ton, and on Galvanized Fence Wire, Nos 0 to 18 inclusive, a reduction of $20 per ton. The general bearing of this action on the market is referred to above under Wire Nails. The new prices are for immediate specifications and prompt shipment, and are subject to withdrawal without notice.

White Lead.—The trade so generally anticipated their requirements for Lead products early in the year and demand from retailers has been so light that there is at the present time a marked absence of orders for forward delivery. There is also a lack of spring activity in the Paint trade. Prices are firm at former quotations.

Linseed Oil.—The demand for Oil, as a rule, is limited and for small lots. The market, however, is firm at former quotations.

Spirits Turpentine.—Values in Turpentine have declined this week about 3 cents a gallon. The market is steady at the lower rates, however, as stocks are low and arrivals of the new crop are expected to be affected by the recent rains and floods in the South.

Rosin.—A reduction averaging about 10 cents a pound has occurred in the price of Rosin. Business is described as slow.

The announcement is made that the English & American Shipping Company of Philadelphia have closed a contract to deliver in Europe within the next 12 months 100,000 tons of American bituminous coal, with the option of loading either at Philadelphia or Norfolk, Va.

The University of Wisconsin, at Madison, will open a School of Commerce in the fall, with Prof. W. A. Scott as the director.

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ROOFING SUPPLIES, METALS, TIN PLATES, &c.

REVISED APRIL 27, 1900.

The following New York quotations are for small lots:

Aluminum—

No. 1 Aluminum (guaranteed over 99% Pure), in ingots for remelting,
Small lots.....₱ lb, 37¢
100-lb lots.....₱ lb, 35¢
Aluminum Sheet, B. & S. gauge.
In lots of 50 lbs or more.

	6-in.	14-in	24-in.	30-in.
Wider than.....				
And including.....	14-in	24-in.	30-in.	
	₱ lb	₱ lb.	₱ lb.	
Nos. 13 to 19.....	$0.42	$0.44	$0.47	
" 20.....	.44	.46	.49	
" 21 to 23.....	.46	.48	.51	
" 24.....	.46	.50	.53	
" 25.....	.47	.51	.54	
" 26.....	.47	.54	.59	
" 27.....	.48	.57	.62	
" 28.....	.48	.57	.64	
" 29.....	.49	.60	.69	
" 30.....	.50	.64	.77	

Note.—Lots of less than 50 lbs 5¢ ₱ lb extra.

Antimony—

Cookson.....₱ lb, 11¼¢
Hallett's.....₱ lb, 10½¢
U. S.....₱ lb, 10¼¢

Brass—Planished.....net

Roll and Sheet .....20% off

Brass and Copper Tubes

Brazed Brass Tubing—

Brown & Sharpe's Gauge the Standard.

List Feb. 26, 1896.

Plain Round Tube.	Per lb.
¼-in. up to 2-in.	$0.35
⅝-in. up to ¾-in.	.38
⅞-in. up to ⅞-in.	.38
1-in. up to 1½ in.	.41
5-16-in. up to ⅜-in.	.48
¼-in. up to 5-16-in.	.65
3-16-in. up to ¼-in.	1.00
⅛-in. up to 3-16-in.	1.50
Smaller than ⅛-in.	Special
3-in. and larger	Special
2-in. to 3-in. to No. 19, inclusive	.38

35% off.

Copper & Bronze Tubing—

3¢ ₱ lb more than Brass.

Conductors—

Corrugated. *Round or Square.*—

Galvanized ⅛ or more. N'st'd. 60&20&2½%
" Less than ⅛, Nested..... 60&10%
" Locked Joints, ⅛ or more, Nested..... 60&20&2½%
Galvanized Locked Joints, less than ⅛, Nested..... 60&20%

Spiral Riveted.

Galvanized 40%
See also *Elbows and Shoes; Eave Trough Miters; Strainers, Conductor.*

Conductor Strainers—See *Strainers, Conductor.*

Copper—

Bottoms, Pits and Flats ₱ lb 24½¢ basis
Lake Ingot.....18@18¼¢
Ansonia Grade Casting..... 17½@17¾¢
Planished.....net
Sheet and Bolt.....20½¢ ₱ lb basis

Eaves Troughs—

List Feb. 1, 1895.

Lap or Slip Joint, Galvanized, in crates 75&10%

Eave Trough Mitres—

Lap or Slip Joint.....list, 25%

Elbows—Plain Adjustable—

Eastern List.

Tin.....30%
Galvanized.....30%

Stove Pipe—

New York Four-Piece.

	4	4½	5	5½	6-inch.
No. 1.	$0.80	.85	.90	1.00	1 05 per doz
No. 2.	.65	.70	.75	.80	.85 "
No. 3.	.60	.63	.65	.70	.80 "

Elbows and Shoes—

Corrugated

Round or Square.

Galvanized 60%

Gasoline—See *Petroleum Products.*

Iron, Sheet—*Black.*

	Common American.	R. G. Cleaned American.
Nos. 10 to 16.....	₱ lb, 3.35....	3.35¢
Nos. 17 to 21.....	₱ lb, 3.40....	3.45¢
Nos. 22 to 24.....	₱ lb, 3.45....	3.55¢
Nos. 25 and 26.....	₱ lb, 3.50....	3.60¢
No. 27.....	₱ lb, 3.55....	3.65¢
No. 28.....	₱ lb, 3.60....	3.75¢

Russia, Planished, &c.

Genuine Russia, according to assortment.....₱ lb 10½¢
Do. Stained.....6¢@10¢
Patent Planished ₱ lb A, 10½¢; B, 9½¢ net

Galvanized.

Nos. 10 to 16.....₱ lb, 12¢
Nos. 17 to 21.....₱ lb, 13¢
Nos. 22 to 24.....₱ lb, 14¢
Nos. 25 to 26.....₱ lb, 15¢
No. 27.....₱ lb, 16¢
No. 28.....₱ lb, 17¢
No. 29.....₱ lb, 19¢
No. 30.....₱ lb, 21¢

70@7½% & oil.

36 in. 1¢ ₱ lb higher

Kerosene—See *Petroleum Products*

Lead—

American Pig .....5⅛@5¼¢
Bar.....5¾¢
Pipe (full coils and lengths).....7 ¢
Pipe (cut coils and lengths) .....7½¢
Tin Lined Pipe.....12½¢
Block Tin Pipe.....47½¢
Sheet Lead (full rolls).....8 ¢
Sheets (cut rolls).....9 ¢

20% off.

Old Lead in exchange, 4¼¢ ₱ lb.

Mitres, Eave Trough—See *Eave Trough Mitres.*

Nickel—

Per lb.....45@50¢

Paints, Oils, &c.—

Lead, White, Atlantic and Jewett's, 7½¢
Lead. Amn. White, in oil..... 7½¢
Lead, Red, bbls. and ⅛ bbls..... 7½¢
Lead, Red, kegs..... 7½¢
Linseed Oil:
Raw, ₱ gal.....85¢
Boiled.....87¢
Spirits Turpentine:
In bbls.....52½¢
In cases.....60½¢
Putty:
In barrels and ½ bbls.....2¼¢
In tubs.....2¼¢
In tin cans.....3¼¢
In bladders.....2½¢

Palm Oil. 1500 lb casks.

Fancy Lagos.....₱ lb 6⅛¢
Clarified.....₱ lb 5¾¢
Accra.....₱ lb 5⅝¢
Half Jack.....₱ lb 5⅜¢

Petroleum Products—

In Barrels (Barrel Included)

Stove Gasoline.....₱ gal. 13@14¢
Kerosene.....₱ gal. 12¾@13¢

Pipe, Drain.....50%

Pipe, Spiral—See *Conductors.*

Registers—

List Feb. 1, 1899.

Black Japanned.....50%
White Japanned.....40%
Nickel Plated.....50%
Bronze Finishes in imitation of Gold, Silver, Copper or Bronze.....40%
Electroplated in Brass, Bronze or Copper.....40%
White Porcelain.....20%
Solid Brass and Bronze Metal.....20%

Roofing Material—

Asphaltum, Trinidad Refined, ₱ ton .....$30.00@$35.00
Asphaltum, Rock, ₱ ton.....$14.00
Heavy Single Ply Tar Felt,.....₱ lb 2½¢
2 Ply Roofing Felt, ₱ roll, 108 sq. ft. $1.80
3 Ply Roofing Felt, ₱ roll, 108 sq. ft. 1.70
Roofing Pitch ₱ bbl.....$2.40@$2.50

Rosin

(Barrels of 280 lb. Barrels weigh actually about 400 lb).

Common and Good—Strained.

Rosin, C. & D.....	₱ bbl. $1.60	@$1.60
Rosin, E. & F.....	₱ bbl. 1.65	@ 1.75
Rosin, G. & H.....	₱ bbl. 1.75	@ 1.85
Rosin, I. & K.....	₱ bbl. 2.05	@ 2.30
Rosin, M. & N.....	₱ bbl. 2.55	@ 2.70

Seamless Brass Tubes—

Net List, February 6, 1899.

Shoes and Elbows—See *Elbows and Shoes.*

Slate Roofing—

According to size, f. o. b. cars, Quarry Station.

Pennsylvania:
Best Bangor, ₱ sqr.....$3.00@$4.00
No. 1 Bangor Ribbon, ₱ sq 2.85@ 3.25
Pen Argyle, ₱ sqr..... 3.00@ 3.75
Peach Bottom, ₱ sqr..... 4.75@ 5.35
No. 1 Penna. Blacks, ₱ sqr. 2.80@ 3.50
No 1 Chapman Keystone, ₱ sqr..... 3.25@ 4.25
Vermont:
Sea Green, ₱ sqr.....$2.50@$3.15
Purple, ₱ sqr..... 3.75@ 4.25
Unfading Green, ₱ sqr... 3.00@ 4.25
Red, ₱ sqr..... 7.00@11.00
Maine:
Brownville, Unfading Black:
No. 1 quality.....$5.00@6.50
No 2 quality.....$4.00@5 50

Solder and Soldering Fluids—

Solder—

½&½ guaranteed.....21@22¢
No. 1.....17@19¢

Prices of Solder indicated by private brands vary according to composition.

Soldering Fluids—

Acme Soldering Flux.

Per gal.....60¢

Concentrated Soldering Flux.
f.o.b. New York.

In barrels, ₱ lb.....4¢
Smaller quantities, ₱ lb.....5¢

Eureka Soldering Flux—Triple Strength

In barrels, ₱ lb.....3 ¢
Smaller quantities, ₱ lb.....3½¢

Eureka Soldering Flux—Extra Concentrated

In barrels, ₱ lb.....4½¢
Smaller quantities, ₱ lb.....5 ¢

Eureka Soldering Flux—Crystal.

In 100-lb cases, ₱ lb.....7¢

Gedney's Soldering Fluid.

In carboys or barrels, ₱ lb.....2¢
$1.50 for carboy or barrel; money refunded when returned.

Kester's Soldering Salts.

Half-lb can.....25¢
1-lb can.....50¢
5-lb can.....$1.50

Lennox Soldering Fluid.

In barrels, ₱ lb.....2¢
In carboys, ₱ lb.....3¢

Perfection Soldering Flux.
No charge for package.

Bbls. about 500 lb, ₱ lb.....3¢
½ bbls., about 300 lb, ₱ lb.....3½¢
Kegs, about 110 lb, ₱ lb.....3½¢
Kegs about 55 lb, ₱ lb.....4¢

Yager's Soldering Salts.

1 lb bottles, each.....60¢
5 lb bottles, ₱ lb.....40¢

Soldering Coppers—

Per lb.....22@22½¢

Spelter—

Western Spelter.....5½@5¼¢

Spiral Pipe—See *Conductors.*

Stove Pipe Elbows—See *Elbows, Stove Pipe.*

Stove Trucks—See *Trucks, Stove*

Strainers, Conductor—

Galvanized.....50%

Tin Pigs and Bars—

Banca, Pigs. ₱ lb.....33¢
Straits, pigs. ₱ lb.....32@32½¢
Straits, in bars, ₱ lb.....33@33½¢

Tin Plates, American Charcoal Plates, Bright—

N. B.—The price of 20 x 28 sizes is double the price of 14 x 20.

Calland Grade:

IC,	14 x 20.....	$7.50
IX,	14 x 20.....	9.00
IXX,	14 x 20.....	10.25
IXXX,	14 x 20.....	11.50
IXXXX,	14 x 20.....	12.75

Melyn Grade:

IC,	14 x 20.....	7.00
IX,	14 x 20.....	8.50
IXX,	14 x 20.....	9.75
IXXX,	14 x 20.....	11.00
IXXXX	14 x 20.....	12.25

Allaway Grade:

IC,	14 x 20.....	6.15
IX,	14 x 20.....	7.25
IXX,	14 x 20.....	8.35
IXXX,	14 x 20.....	9.45
IXXXX,	14 x 20.....	10.55

Coke Plates, Bright—

Bessemer Steel, or equal to J. B. Grade, full weight } IC, 14 x 20.....$5.30@5.40
" " IX, 14 x 20.....$6.25@6.30

N. B.—The reduction per box on lighter Plates than IC, 14 x 20, is as follows:

100 lb.....15¢
95 lb.....20¢
90 lb.....25¢
85 lb.....30¢

Terne Plates—

N. B.—The following prices are for IC, 20 x 28, the rate for 14 x 20 being half as much. IX is usually held at $2 per box advance:

About 40 lb coating.....$16.25@16.75
About 80 lb coating..... 15.00@16.00
About 20 lb coating..... 13.00@14.00
About 15 lb coating..... 11.50@12.00
About 8 to 10 lb coating... 10.50@10.75

Boiler Plates, American—

IXX, 14 x 26..(112 sheets).....$13.00
IXX, 14 x 28..(112 sheets).....14.00
IXX, 14 x 31..(112 sheets).....15.50

Troughs Eave—See *Eave Trough.*

Trucks, Stove—

Improved Lock Frame, per doz...$15.00
Steel Lock Frame, per doz..... 18.00
Daisy Improved pattern, ₱ doz... 18.00

Tubing—

Tin.....50% | Galvanized.....50%
Fittings for do.....40%

Zinc—

600 lb casks ₱ lb.....7¾@7¾¢
Per lb.....8¢

PLUMBERS' AND STEAM FITTERS' SUPPLIES.

Fittings—

List of Oct 7, 1899.

Cast Iron Fittings, Black and Galvanized, Standard sizes 60%
Cast Iron Bushings and Plugs.....60%
Cast Iron Flanges.....60%
Malleable Iron Fittings.....40@45%
" " Bushings.....60%
" " Unions.....60%
Wrought " Nipples.....60%
" " Couplings.....55%
" " Long Screws.....60%

Cast Iron Soil Pipe—

2 to 6 inch inclusive.

Standard.....45%
Extra Heavy.....50%
All Fittings.....50%

Merchant Wrought Iron Pipe—

List Feb. 15, 1900.

Random Lengths.

	Black.	Galv.
⅛, ¼ and ⅜ inch.....	20%	5%
½ inch.....	30%	15%
¾ inch.....	40%	20%
1 inch to 4 inches.....	45%	25%

Extra Strong Pipe—

Random Lengths.

	Black	Galv.
		Net.
⅛ to ⅛ in.....	15%	
¼ to 2 in.....	22½%	7½%
2½ to 8 in.....	17½%	5%

Valves, Cocks, &c.—

Iron Body Valves.....60&10%
Air Cocks and Radiator Air Cocks.....60&10%
Soldering Unions.....65@65&10%
" Nipples.....65@65&10%
Brass Unions (Rough and Finished).60%
Jenkins Bros.':
Iron Body Valves, except Gate Valves 55%
All Iron Valves, except Gate Valves.. 40%
Iron Body Gate Valves.....50%
All Iron Gate Valves.....35%
Iron Cocks, all Iron.....60&10%
" " with Brass Plugs.....60%
Brass Globe, Angle and Cross Valves. 50&10%
" and Angle Valves, hose outlet.....50&10%
Brass Garden Hose Valves,.....50&10%
" Horizontal, Vertical and Angle Check Valves.....50&10%
Brass Safety Valves.....55%
" " Low Pressure....55%
Brass Radiator Valves 65%
" " Jenkins..... ... 55%
Brass Jenkins' Globe, Angle, Cross and Corner Valves.....55%
Brass Jenkins' Safety and Check Valves.....40%
Brass Jenkins' Gate Valves.....50%
Brass Steam Cocks.....50&10%
" Gas Meter and Union Meter Cocks.....50&10%
Brass Fittings, Rough.....60%
" " Finished 60%
" Bushings.....60%

Plumbers' Brass Work—

List of December 7, 1896.

Ground Key Work:
Rough..... 60@60&10%
Finished..... 50@55%
Compression Work.....50@55%
Chain Stays.....55%
Iron Boiler Couplings:

	Lead Pipe.	Iron Pipe.
Plain Face....₱ set	$1.10	$1.25
Ground Face..₱ set	$1.25	$1.40

Basin Plugs.....50&10%
Sink or Bath and Wash Tray Plugs.....50&10%
Basin Clamps.....40@80¢ ₱ doz. net

Bath Tubs—

Copper Lined Bath Tubs.....35%
Enameled Bath Tubs.

List of March 26, 1900.

Regular Patterns, Guaranteed, Complete Line.....20&5%
All High Grade and Special Patterns (except as below).....10%
"Diana" and "Brighton."..... 20%
Non-Guaranteed Brands, complete line.....20&5%
Steel Clad Copper Lined Bath Tubs, list of Feb. 1, 1899.....40@45%
Porcelain Lined Iron Bath Tubs.....20%
Solid Copper, list of Feb. 1, 1899.....20%

Boilers—

Standard Boilers:
30, 35 and 40 gal.....60%
Other sizes up to 52 gal.....55%
53 gal. and above.....45%
Extra Heavy Boilers:
18 to 52 gal.....50%
53 gal. and above.....40&5%

Sinks—Cast Iron—

	Black	Galv.
Sinks, Square, Half Round and Corner	45%	50%
Sink Legs.....	45%	50%
Sink Backs.....	45&5%	50&5

Wrought Steel—

Columbus, Galv'd and Enameled..... 45%
Columbus, Painted.....30%
L. & G.....50%

Miscellaneous—

Earthenware, List of July 17, 1899.....
Basins, Urinals and Hoppers..... 40%
Closet Bowls, Sundries, Washouts and Pedestals.....40%
Drawn Lead Traps, List of Aug. 2, 1897.....30@35%

CLASSIFIED LIST OF ADVERTISERS.

Acetylene Gas Generators.
Abner Acetylene Gas Co., Chicago.
Carroll, J. B., Chicago, Ill.
International Heater Co., Utica, N. Y.

Aluminum Ingots.
Janney, Steinmetz & Co., Phila., Pa.

Aluminum Scrap Buyers.
Janney, Steinmetz & Co., Phila., Pa.

Aluminum Sheets.
Janney, Steinmetz & Co., Phila., Pa.

Aluminum Ware.
Hill, Whitney & Wood Co., Waltham, Mass.

Architectural Ornaments.
Frand, Martin J. & Co., Camden N. J.
Friedley & Voshardt, Chicago, Ill.

Ball Cocks.
Birkery, Mfg. Co., Hartford, Conn.

Bathtubs.
Lipp, Louis Co., Cincinnati, O.

Beer Pumps.
I. X. L. Beer Pump Co., Phila., Pa.

Black Plates.
American Tin Plate Co., New York.

Boiler Cleaners.
Amer. Water Back Boiler and Heater Cleaner Co., Chicago.

Boilers, Range.
Koven, L. O. & Bro., 18 Spruce Street, N. Y.
Wolff, L. Mfg. Co., Chicago, Ill.

Brass Sheets, Rolls, &c.
Hungerford, U. T. Brass & Copper Co., 121 Worth St., N. Y.

Broilers.
Barnard, W. H. & Co., Norfolk, Va.

Burners, Acetylene.
Carroll, J. B., Chicago, Ill.

Can Makers' Tools and Machines.
Bliss, E. W. Co., Brooklyn, N. Y.
Gordon, W. J., Phila., Pa.
Niagara Machine & Tool Wks., Buffalo, N. Y.
Robinson, J. M. & Co., Cincinnati, O.
Stiles & Parker Press Co., Brooklyn, N. Y.

Castings, Iron.
Cheney, S. & Son, Manlius, N. Y.

Ceilings, Metallic.
American Corrugating Co., St. Louis, Mo.
Berger Mfg. Co., Canton, O.
Brooklyn Metal Ceiling Co., Brooklyn, N. Y.
Canton Steel Roofing Co., Canton, O.
Dowman Mfg. Co., Atlanta, Ga.
Eller, J. H. & Co., Canton, O.
Friedley & Voshardt, Chicago, Ill.
New York Iron Roofing & Cor. Co., Jersey City, N. J.
Vogan & Strauss, Kenosha, Wis.

Cellar Drainers.
Kemp, C. M. Mfg. Co., Baltimore, Md.

Chimney Top Ventilators.
Iwan Bros., Streator, Ill.

Cocks, Ball, Basin and Stop.
Stebbins, E. Mfg. Co., Brightwood, Mass.

Coils.
National Pipe Bending Co., New Haven, Conn.

Conductor Pipe and Elbows.
Amer. Steel Roofing Co., Cincinnati, O.
Berger Bros. Co., Philadelphia, Pa.
Canton Steel Roofing Co., Canton, O.
Clark, Quien & Morse, Peoria, Ill.
Lawrence-Letts Elbow Co., Ltd., Waverly, N. Y.
McClure & Co., Pittsburgh, Pa.
Marlin & Co., Pittsburgh, Pa.
Souther, E. E. Iron Co., St. Louis, Mo.
Weyand, Henry, Waterbury, Ct.

Conductor Pipe Hangers.
Iwan Bros., Streator, Ill.

Cooking Utensils.
Hill, Whitney & Wood Co., Waltham, Mass.

Copper, Roofing and Cornice.
Gummey, McFarland & Co., Phila., Pa.
Hungerford, U. T. Brass & Copper Co., 121 Worth St., N. Y.

Cornice Machinery.
Double Truss Cornice Brake Co., Buffalo, N. Y.
Keene, Geo. C. & Co., Cincinnati, O.
Ohl, Geo. A. & Co., Newark, N. J.
Peck, Stow & Wilcox Co., 27 Murray St., New York.
Phila. Machine Tool Co., Phila., Pa.
Robinson, J. M. & Co., Cincinnati, O.

Cornice Work, Galvanized Iron.
Garry Iron & Steel Roofing Co., Cleveland, O.
Marlin & Co., Pittsburgh, Pa.

Couplings. (*See Pipe Couplers.*)

Cut Offs, Rain Water.
Cooney & Geiger, Indianapolis, Ind.

Dampers.
Arcade Mfg. Co., Freeport, Ill.
Greene, W. F., Est. of, Troy, N. Y.
Stover Mfg. Co., Freeport, Ill.
Troy Nickel Works, Troy, N. Y.

Die Stocks.
Curtis & Curtis, Bridgeport, Ct.
Fowler Automatic Draft Reg. & Vent. Co., Lawrence, Mass.

Drop Hammers.
Bliss, E. W. Co., Brooklyn, N. Y.

Dumb Waiters.
Energy Mfg. Co., Phila., Pa.

Eave Troughs.
Berger Bros. Co., Philadelphia, Pa.
Berger Mfg. Co., Canton, O.
Clark, Quien & Morse, Peoria, Ill.
Eller, J. H. & Co., Canton, O.
Marlin & Co., Pittsburgh, Pa.
Souther, E. E. Iron Co., St. Louis, Mo.
Weyand, Henry, Waterbury, Ct.

Eave Trough Hangers.
Berger Bros. Co., Phila., Pa.
Berger Mfg. Co., Canton, O.
Nimmons & Becker, Plymouth, O.

Eave Trough Machines.
Marlin & Co., Pittsburgh, Pa.

Elbows, Stove Pipe.
Hill, Jas. Mfg Co., Providence R. I.
Lawrence-Letts Elbow Co., Ltd., Waverly, N. Y.
Souther, E. E. Iron Co., St. Louis, Mo.

Electric Dynamo Machines.
Hanson & VanWinkle Co., Newark, N. J.
Zucker & Levett & Loeb Co., 526-530 W. Twenty-fifth St., New York.

Enamel.
Baltimore Enamel Co., Baltimore, Md.

Enameling.
Baltimore Enamel Co., Baltimore, Md.

Estimate Books.
Mersick, C. S. & Co., New Haven, Conn.
Vanderman Plumbing & Heating Co., Willimantic, Conn.

Faucets.
Clark Metallic Mfg. Co., Rochester, N. Y.
Clark Novelty Co., Rochester, N. Y.
Litchfield, J. M., 105 Beekman St., N. Y.

Filters, Water.
Leland Filter Co., Great Barrington, Mass.

Fire Brick.
Presbrey Stove Lining Co., Taunton, Mass.
Valentine, M. D. & Bro. Co., Woodbridge, N. J.

Fire Pots.
Clayton & Lambert Mfg. Co., Detroit, Mich.
Indianapolis Steel Roofing & Cor. Co., Indianapolis, Ind.
Turner, W. W & Co., Chicago, Ill.

Fire Sets.
Troy Nickel Works, Troy, N. Y.

Fittings, Plumbing.
Illinois Mall. Iron Co., Chicago, Ill.
Lawler Water Feed & Damper Regulator Co., 181 Mercer St., N. Y.

Floor Sleeves.
Illinois Malleable Iron Co., Chicago, Ill.

Flue Stopper.
Stuber & Kuck, Peoria, Ill.

Food Cutters.
Peck, Stow & Wilcox Co., 27 Murray St., N. Y.

Forming Machines.
Bishop G. E., Dowagiac, Mich.
Pocock, Oliver, Cincinnati, O.

Furnace Pipe and Fittings.
Hessler, H. E. Co., Syracuse, N. Y.
International Heater Co., Utica, N. Y.

Furnaces and Heaters.
Barstow Stove Co., Providence, R. I.
Bergstrom Bros. & Co., Neenah, Wis.
Boynton Furnace Co., 207-209 Water St., New York.
Brand Stove Co., Milwaukee, Wis.
Dighton Furnace Co., Taunton, Mass.
Floyd, Wells & Co., Royersford, Pa.
Giblin & Co., Utica, N. Y.
Hart & Crouse Co., Utica, N. Y.
Hess, Snyder & Co., Massillon, O.
International Heater Co., Utica, N. Y.
Kelsey Furnace Co., Syracuse, N. Y.
Lennox Machine Co., Marshalltown, Iowa.
Magee Furnace Co., Boston, Mass.
Meyer Furnace Co., Peoria, Ill.
Mueller, L. J. Furnace Co., Milwaukee, Wis.
Prizer-Painter Stove & Heater Co., Reading, Pa.
Richmond Stove Co., Norwich, Conn.
Schill Bros. Co., Crestline, O.
Schwab & Sercomb, Milwaukee, Wis
Sheppard, Isaac A. & Co., Phila., Pa.
Stamford Foundry Co., Stamford, Ct.
Thatcher Furnace Co., 240 Water St., N. Y.

Galvanized Ware.
Keen & Hagerty Mfg. Co. Baltimore, Md.

Gas Appliances.
Crane, . . M. Co., 1131 B'way, N. Y.

Gas Heaters. (*See Stoves and Ranges, Gas.*)

Gas Machines.
Abner Acetylene Gas Co., Chicago, Ill.
Kemp, C. M. Mfg. Co., Baltimore, Md.

Grates.
Fowler Automatic Draft Reg. & Vent. Co., Lawrence, Mass.

Heater Cleaners.
Amer. Water Back Boiler and Heater Cleaner Co., Chicago.

Heaters, Steam and Hot Water.
American Radiator Co., Chicago, Ill.
Barstow Stove Co., Providence, R. I.
Boynton Furnace Co., 207-209 Water St., New York.
Drake, W. H., Newark, N. J.
Gorton & Lidgerwood Co., 96 Liberty St., New York.
Gurney Heater Mfg. Co., Boston, Mass.
Hart & Crouse Co., Utica, N. Y.
International Heater Co., Utica, N. Y.
McLain, J. H. Co., Canton, O.
Magee Furnace Co., Boston, Mass.
National Pipe Bending Co., New Haven, Conn.
Richmond Stove Co., Norwich, Conn.
Sheppard, Isaac A. & Co., Phila., Pa.
Smith & Thayer Co., Boston, Mass.
Thatcher Furnace Co., 240 Water St., N. Y.

Heat Regulators.
Howard Thermostat Co., Oswego, N. Y.

Hollow Ware.
Cleveland Stamping & Tool Co., Cleveland, O.
Sperry, D. R. & Co., Batavia, Ill.

Hot Plates.
Odin Stove Mfg. Co., Ltd., Erie, Pa.

Hot Water Attachment.
Turner, W. W. & Co., Chicago, Ill.

Ice Cream Dishers.
Seavey Mfg. Co., Boston, Mass.

Iron, Galvanized Sheet. (*See Sheets, Galvanized.*)

Iron, Planished Sheet.
Wood, W. D. Co., McKeesport, Pa.

Iron and Steel, Sheet. (*See Sheets, Iron and Steel.*)

Iron Shutters and Doors.
Garry Iron & Steel Roofing Co., Cleveland, Ohio.

Knife and Tool Grinder.
Union Mfg. Co., Buffalo, N. Y.

Lanterns.
Berger Mfg. Co., Canton, O.

Lath, Metallic.
American Corrugating Co., St. Louis, Mo.
Schratwiesers Metal Lath Works.

Laundry Trays.
Graham, Chas., Chemical Pottery Works, Brooklyn, N. Y.

Lavatories.
Wheeler, E. S. & Co., New Haven, Ct.
Young, Jos. H., Boston, Mass.

Lawn Sprinklers.
Cleveland Stamping & Tool Co., Cleveland, O.

Lead Pipe.
Colwell Lead Co., 68 Centre St., N. Y.

Lighting Apparatus.
Incandescent Light & Stove Co., Cincinnati, O.

Lightning Rods.
Washburne, E. G. & Co., 46 Cortlandt St., N. Y

Lunch Boxes.
Seavey Mfg. Co., Boston, Mass.

Metal Ceilings. (*See Ceilings, Metallic.*)

Metals.
Trench, Stewart & Co., 73 Beekman St., N. Y.

Metal Specialties.
Clark Metallic Mfg. Co., Rochester, N. Y.

Mica.
Asheville Mica Co., Asheville, N. C.
Munsell, Eugene & Co., 218 Water St., New York.

Nickel Plating Outfits.
Hanson & Van Winkle Co., Newark N. J.
Zucker & Levett & Loeb Co., 526-530 W. Twenty-fifth St., New York.

Oil Heaters. (*See Stoves and Ranges, Oil, Vapor and Gasoline.*)

Ovens, Portable.
Griswold Mfg. Co., Erie, Pa.

Patent Solicitors.
Hamlin, G. R., Washington, D. C.
Howson & Howson, Philadelphia, Pa.
Stocking, E. B., Washington, D. C.

Patterns.
Cope, Geo. W., Detroit, Mich.
Gobeille Pattern Co., Cleveland, Ohio.
Remmers Pattern Co., St. Louis, Mo.
Vedder Pattern Wks., Troy, N. Y.

Perforated Sheet Metal.
Harrington & King Perforating Co., Chicago, Ill.

Pig Iron.
Wister, L. & R. & Co., Philadelphia, Pa.

Pipe Crimper.
Wheeler, W. A., Indianapolis, Ind.

Pipe Shears.
Woodard, W. H. & Co., Clifton Park, O.

Pipe, Water and Gas.
Tufts, Walter B., 96 John St., N. Y.

Plumbers' Tools, Specialties and Supplies.
Barstow Stove Co., Providence, R. I.
Birkery Mfg. Co., Hartford, Conn.
Clayton & Lambert Mfg. Co., Detroit Mich.
Colwell Lead Co., 68 Centre St., N. Y.
Glauber, Sam. S., 1502 2nd Ave., N. Y.
Graham, Chas., Chemical Pottery Works, Brooklyn, N. Y.
Illinois Malleable Iron Co., Chicago, Ill.
Lawler Water Feed & Damper Regulator Co., 181 Mercer St., N. Y.
Lipp, Louis Co., Cincinnati, O.
National Pipe Bending Co., New Haven, Conn.
Stebbins, E. Mfg. Co., Brightwood, Mass.
Wheeler, E. S. & Co., New Haven, Ct.
Wolff, L. Mfg. Co., Chicago, Ill.
Young, Jos. H., Boston, Mass.
Zero Valve & Brass Mfg. Co., Buffalo, N. Y.

Pokers and Lifters.
Arcade Mfg. Co., Freeport, Ill.
Stover Mfg. Co., Freeport, Ill.
Troy Nickel Works, Troy, N. Y.

Potato Masher.
Vogel, Wm. & Bros., 37 to 47 S. 9th St., Brooklyn, N. Y.

Presses and Dies.
Bliss, E. W. Co., Brooklyn, N. Y.
Ferracute Machine Co., Bridgeton, N. J.
Gordon, W. J., Philadelphia, Pa.
Miner & Peck Mfg. Co., New Haven, Conn.
Niagara Machine & Tool Wks., Buffalo, N. Y.
Phila. Machine Tool Co., Phila., Pa.
Robinson, J. M. & Co., Cincinnati, O.
Stiles & Parker Press Co., Brooklyn, N. Y.

Pumps
Athol Pump Co., Athol, Mass.
Hess, Snyder & Co., Massillon, O.
Lawless, J. H., Jersey City, N. J.

Punching Machines.
Bertsch & Co., Cambridge City, Ind
Bliss, E. W. Co., Brooklyn, N. Y.
Clough, R. M., Tolland Conn.
Robinson, J. M. & Co., Cincinnati, O.

Radiators, Steam and Hot Water.
American Radiator Co., Chicago, Ill.
Gurney Heater Mfg. Co., Boston, Mass.

Rainwater Strainer and Filter.
Perkins, J. L. & Co., Chicago, Ill.

Range Boilers.
Koven, L. O. & Bro., 18 Spruce St., N. Y.
Wolff, L. Mfg. Co., Chicago, Ill.

Reflectors.
Frink, I. P., 551 Pearl St., New York.

Refrigerators.
Gurney Refrigerator Co., Fond du Lac, Wis.

Registers.
Dighton Furnace Co., Taunton, Mass.
Highton, Wm. & Sons, Boston, Mass.
Hopson Haftencamp Co., Grand Rapids, Mich.
Independent Register Co., Cleveland, Ohio.
Michigan Barrel Co., Grand Rapids, Mich.
Philadelphia Hardware & Malleable Iron Works, Phila., Pa.
Schwab & Sercomb, Milwaukee, Wis.
Seavey Mfg. Co., Boston, Mass.

Roofing Cement and Paint.
Dixon, Jos. Crucible Co., Jersey City, N. J.

Roofing and Siding, Iron and Steel, Corrugated and Plain.
American Corrugating Co., St. Louis, Mo.
Berger Mfg. Co., Canton, O.
Burton, W. J. & Co., Detroit, Mich.
Canton Steel Roofing Co., Canton, O.
Eller, J. H. & Co., Canton, O.
Garry Iron & Steel Roofing Co., Cleveland, O.
Gummey, McFarland & Co., Phila., Pa.
Holton Iron Roofing Co Lisbon, O.
New York Iron Roofing & Cor. Co., Jersey City, N. J.

Roofing Nails.
Salem Nail Co., 279 Pearl St., N. Y.

Roofing Slate.
Auld & Conger, Cleveland, O.
Bray, J. & Co., E. Bangor, Pa.
Galt, John & Sons, 253 Broadway, N. Y.
Johnson, E. J. & Co., 38 Park Row, N. Y.
O'Halloran & Jacobs, Pittsburgh, Pa.

Sap Spouts.
Millar, C. & Son Co., Utica, N. Y.

Schools and Colleges.
International Correspondence Schools, Scranton, Pa.

Screens.
Harrington & King Perforating Co., Chicago, Ill.

Sheet Metal Machinery.
Bertsch & Co., Cambridge City, Ind.
Bliss, E. W. Co., Brooklyn, N. Y.
Clough, R. M., Tolland, Conn.
Double Truss Cornice Brake Co., Buffalo, N. Y.
Ferracute Machine Co., Bridgeton, N. J.
Keene, Geo. C. & Co., Cincinnati, O.

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Miner & Peck Mfg. Co., New Haven, Conn.
Niagara Machine & Tool Wks., Buffalo, N. Y.
Ohl, Geo. A. & Co., Newark, N. J.
Peck, Stow & Wilcox Co., 27 Murray St., New York.
Phila. Machine Tool Co., Phila., Pa.
Pocock, O., Cincinnati, O.
Robinson, J. M. & Co., Cincinnati, O.
Stiles & Parker Press Co., Brooklyn, N. Y.

Sheet Zinc.

American Nickeloid Co., Peru, Ill.

Sheets, Galvanized.

American Sheet Steel Co., New York.
Bruce & Cook, 186 to 190 Water St., N. Y.
McClure & Co., Pittsburgh, Pa.
McCullough Iron Co., Wilmington, Del.
Taylor, N. & G. Co., Philadelphia, Pa.
Wood Alan Co., Philadelphia, Pa.

Sheets, Iron and Steel.

American Sheet Steel Co., New York.
Berger Mfg. Co., Canton, O.
Bruce & Cook, 186 to 190 Water St., N. Y.
Coshocton Rolling Mill Co., Coshocton, Ohio.
Follansbee Bros. Co., Pittsburgh, Pa.
Gummey, McFarland & Co., Phila., Pa.
McCullough Iron Co., Wilmington, Del.
Osborn, J. M. & L. A., Cleveland, O.
Taylor, N. & G. Co., Philadelphia, Pa.
Wellsville Plate & Sheet Iron Co., Wellsville, O.
Wood, W. D. Co., McKeesport, Pa.
Wood Co., Alan Philadelphia, Pa.

Shingles and Tiles, Metallic.

Burden, W. J. & Co., Detroit, Mich.
Cincinnati Stamping Co., Cincinnati, O.
Cortright Metal Roofing Co., Philadelphia, Pa.
Meurer Bros. Co., Brooklyn, N. Y.
Montross Metal Shingle Co., Camden, N. J.
Thorn Shingle & Ornament Co., Philadelphia, Pa.

Shot.

Colwell Lead Co., 63 Centre St., N. Y.

Siding. *(See Roofing and Siding.)*

Skylights.

Canton Steel Roofing Co., Canton, O.

Slaters' Tools.

Galt, Jno. & Sons, 253 Broadway, N. Y.
Salem Nail Co., 279 Pearl St., N. Y.

Snow Guards.

Halliday, C. G., East 9th St., N. Y.

Solder.

Bruce & Cook, 186 to 190 Water St., NY.
Follansbee Bros. Co., Pittsburgh, Pa.
Gummey, McFarland & Co., Phila., Pa.
McClure & Co., Pittsburgh, Pa.
Meurer Bros. Co., Brooklyn, N. Y.
Sanborn, J., 217 Water St., N. Y.
Taylor, N. & G. Co., Philadelphia, Pa.

Soldering Furnaces.

Indianapolis Steel Roofing & Cor. Co., Indianapolis, Ind.
Turner, W. W. & Co., Chicago, Ill.

Speaking Tubes and Whistles.

Ostrander, W. R. & Co., 204 Fulton St., N. Y.

Specialties, Sheet Metal.

Vogel, Wm. & Bros., Brooklyn, N. Y.

Stamping, Sheet Metal.

Hill, Whitney & Wood Co., Waltham, Mass.

Steam and Gas Fitters' Supplies.

Curtis & Curtis, Bridgeport, Conn.

Steam and Water Engineering and Regulating Specialties.

Kieley & Mueller, 7-11 West 13th St., N. Y.

Steel Stamps and Stencil Dies.

Schwerdtle & Siebert, Bridgeport, Ct.

Stove Boards.

Cooper & McKee, Brooklyn, N. Y.

Stove Cement.

Dixon, Jos. Crucible Co., Jersey City, N. J.

Stove Linings.

Marcy Stove Repair Co., 74 Beekman St., N. Y.
Newton, W. M., Albany, N. Y.
Presbrey Stove Lining Co., Taunton, Mass.
Rutland Fire Clay Co., Rutland, Vt.
Taylor, Chas. Sons Co., Cincinnati, O.
Valentine, M. D. & Bro. Co., Woodbridge, N. J.

Stove and Metal Polish.

Hoffman, Geo. W., Indianapolis, Ind. Ill.
Rutland Fire Clay Co., Rutland, Vt.

Stove Patterns.

Cope, G. W., Detroit, Mich.
Gobeille Pattern Co., Cleveland, O.
Vedder Pattern Works, Troy, N. Y.

Stove Pipe Thimbles.

Cheney, S. & Son, Manlius, N. Y.

Stove Repairs.

Hessler, H. E Co., Syracuse, N. Y.
Marcy Stove Repair Co., 74 Beekman St. N. Y.
Troy Nickel Works, Troy, N. Y.

Stove Trimmings, &c.

Fanner Mfg. Co., Cleveland, O.
Greene, W. F., Est. of, Troy, N. Y.
Troy Nickel Works, Troy, N. Y.

Stove Trucks.

Arcade Mfg. Co., Freeport, Ill.
Mersick, C. S. & Co., New Haven, Conn.

Stoves and Ranges.

Barstow Stove Co., Providence, R. I.
Bergstrom Bros. & Co., Neenah, Wis.
Boynton Furnace Co., 207-209 Water St., New York.
Brand Stove Co., Milwaukee, Wis.
Champion Steel Range Co., Cleveland Ohio.
Floyd Wells & Co., Royersford, Pa.
Giblin & Co., Utica, N. Y.
Hess, Snyder & Co., Massillon, O.
Magee Furnace Co., Boston, Mass.
Prizer-Painter Stove & Heater Co., Reading Pa.
Richmond Stove Co., Norwich, Conn.
Schill Bros., Crestline, O.
Sheppard, Isaac A. & Co., Phila., Pa.
Stamford Foundry Co., Stamford, Ct.
Thatcher Furnace Co., 240 Water St., N. Y.
Weir Stove Co., Taunton, Mass.

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Crane, W. M. Co., 1131 B'way, N. Y.
Dangler Stove & Mfg. Co., Cleveland, Ohio.
Griswold Mfg. Co., Erie, Pa.
Odin Stove Mfg. Co., Ltd., Erie, Pa.

Stoves and Ranges, Oil, Vapor and Gasoline.

Dangler Stove & Mfg. Co., Cleveland, Ohio.

Terne Plates.

American Tin Plate Co., New York.

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Berger Bros. Co., Phila., Pa.
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Follansbee Bros. Co., Pittsburgh, Pa.
Keene, Geo. C. & Co., Cincinnati, O.
Niagara Machine & Tool Wks., Buffalo, N. Y.
Ohl, Geo. A. & Co., Newark, N. J.
Peck, Stow & Wilcox Co., 27 Murray St., New York.
Stiles & Parker Press Co., Brooklyn, N. Y.
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Vogel, Wm. & Bros. Brooklyn, N. Y

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Crane, W. M. Co., 1131 Broadway, N. Y.
Kemp, C. M. Mfg. Co., Baltimore, Md.
Odin Stove Mfg. Co., Ltd., Erie, Pa.

Wind Gates.

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Wire and Rod Cutters.

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THE METAL WORKER.

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Original letters of reference should not be inclosed with replies to advertisements appearing in these columns, as they are frequently mislaid and lost. A copy of the reference will serve the purpose.

HELP WANTED.

A good PLUMBER; one who also thoroughly understands steam and hot water fitting, for the Pacific Coast States; must be sober and steady and not afraid to work; a steady job at good wages in a congenial climate to the proper man. The Idaho Hardware & Plumbing Company, Boise, Idaho. April 28

A competent stove SALESMAN for either Missouri or Illinois to travel on commission for a Chicago stove foundry. "Missouri," care *The Metal Worker*, 1205 Fisher Building, Chicago. April 28

At once a PLUMBER and TINSMITH; must be used to country plumbing and jobbing work; must be temperate and reliable; furnish reference. Robinson Bros., Center Moriches, N. Y. April 28

SALESMAN, Greater New York district, by New York metal house, for house furnishing trade; state experience; reference. "Elbows," care *The Metal Worker*, New York. April 28

TWO first-class PLUMBERS in country shop; state wages expected, age and reference. S. C. Grimshaw, East Hampton, Suffolk County, L. I. April 28

A good, sober, reliable TIN and SHEET IRON WORKMAN; tin roofing and guttering, &c.; state wages wanted and experience. L. W. Seabolt, Winston, N. C. April 28

At once a good TINNER for inside and outside work, one who is also a good slater; to a good man will pay good wages and give steady employment. Benninger & Co., Oakdale, Pa. April 28

PLUMBER, one accustomed to country work; state experience and wages wanted; steady work. John J. Shesler, Hastings-on-Hudson, N. Y. April 28

A practical TINNER and SHEET METAL WORKER; must be a temperate man and one who understands furnace work and galvanized cornice work; able to work from drawings; steady job to right person; reference; state wages wanted. Battley & Spann, Norfolk, Va. April 28

At once a TINSMITH and jobber; must be a good all around man. Conover E. White, Lock Box 33, Atlantic Highlands, N. J. April 28

An all around TINNER; must understand roofing, furnace work and plumbing; sober and industrious; a steady job for the right man; give references and wages wanted. N. B. Twogood, Mount Vernon, Iowa. April 28

A practical STOVE PATTERN FILER and FITTER; steady work guaranteed. Charles Fawcett, Sackville, N. B. April 28

SALESMAN—heating boilers—Philadelphia and vicinity; state experience, ability and salary expected. "Boilers," care *The Metal Worker*, New York. April 28

A good reliable TINNER for inside and outside work; pay fair wages and work 12 months in the year; town of about 1800. B. S. Magill, Tidioute, Pa. April 28

Competent FOREMAN to take charge of press room in a pieced and stamped tinware factory employing about 25 hands; must understand machinery and setting dies, and furnish good references. Apply, stating salary per week, "Stamper," care *The Metal Worker*, New York. April 28

A first-class up to date FOREMAN for furnace and range foundry; one with experience necessary. "X. Y.," care *The Metal Worker*, New York. April 28

At once an all round man who can do plumbing, steam and hot water fitting and tin work; steady work the year round to the right man; state experience and wages expected. G. F. Wilbraham, Windsor, Conn. April 28

REPRESENTATIVES, visiting hardware trade, to sell steel ranges on commission; the range is new and unexcelled; price reasonable; state section you travel in, commission, &c. "Trade," care *The Metal Worker*, New York. April 28

At once a good TINSMITH; one who is used to furnace work and general jobbing. "R. S. T.," care *The Metal Worker*, New York. April 28

TRAVELING STOVE SALESMAN for Illinois to represent prominent stove foundry; only men of experience need apply. "Prominent," care *The Metal Worker*, New York. April 28

A young man who has worked in a country shop for two, three or four years at plumbing, tinning and roof and leader work; must be strictly sober and steady and board with employer; state age, how long at business; give reference from last employer and wages expected. "T. B.," P. O. 412, Madison, Conn. April 28

At once, two or three CORNICE MAKERS. Apply to Wm. T. Disley, Waterbury, Conn. April 21

At once, a practical man who can estimate correctly and do satisfactory heating and plumbing work; state wages expected and give reference. Wm. Bernard, Fredericksburg, Va. April 21

AT ONCE, an all round man who can do plumbing, steam and hot water fitting and tin work; a steady job for a young steady man not afraid of work; state experience and wages expected. Address at once, C. H. Avery, Nashua, N. H. April 21

TINNER and PLUMBER.—Young man with four or five years' experience at inside and outside tin work, jobbing, plumbing and furnace work, repair gasoline ranges; steady work the year round to the right man; state wages and age. P. O. Box 61, Maplewood, Mo. April 21

Good, practical PATTERN FILER and FITTER; one thoroughly acquainted with stove work. "Reynolds," care *The Metal Worker*, Pickering Building, Cincinnati, Ohio. April 14

A thoroughly experienced SALESMAN in the manufacturing kitchen furnishing goods business, for the stove and special business; must have good executive ability and be capable of managing and directing the sales and shipping departments; of good address and unquestioned habits, and a knowledge of the New England trade. Address, with full particulars as to age, experience, when and where, and wages expected, "S. F. G.," Back Bay P. O., Boston, Mass. April 14

A first-class SALESMAN for tin plates, sheet iron and full metal line, for New York City; man of experience much preferred. Wheeling Corrugating Company, 81 Fulton street, New York. April 14

STOVE SALESMAN, acquainted with the trade in Illinois, Iowa, Kansas, Nebraska and the far West; fine opening for the proper parties. "Stoves and Furnaces," care *The Metal Worker*, Fisher Building, Chicago, Ill. April 14

Pattern maker as FOREMAN; experienced in drafting and designing patterns for boilers, furnaces and ranges; permanent position and good pay for right man. "Patterns," care *The Metal Worker*, New York. April 14

A good all around TIN and SHEET IRON WORKER, one who understands ordinary plumbing, fixing pumps and work generally done in a country shop. Geo. H. Smith, Port Jefferson, L. I. April 14

A man who is a good TINNER and can do all kinds of country work; must understand pumps and have a fair knowledge of steam, hot water heating and plumbing; state age and wages wanted; this is a good job for the right man. H. P. Sanderson, Chester, N. J. April 14

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As SALESMAN and OFFICE HELP for a first-class line of stoves and ranges, granite and tinware, oil stoves and gas stoves, or will open as manufacturers' agent for high grade goods; large experience in wholesale house; best of references. A. J. Taylor, 456 Sherbrooke street, Winnipeg, Man. April 28

As NICKEL PLATER; 20 years' experience; thoroughly posted in making all solutions for gold, silver, brass, bronze, copper, white and black nickel; up to date in fancy colors and all kinds of oxidizing and antique finishing; would like to correspond with a good firm. "Plater," care *The Metal Worker*, New York. April 28

By a first-class PLUMBER; long experience; will take charge of work if necessary; temperate; desire steady job. S. P., General Delivery, Troy, N. Y. April 28

Steady position in a good plumbing shop by a young man, 24, as PLUMBER; nine years' experience; can do jobbing or new work; also tin repair work and steam fitting. T. J. McCulloch, Marksboro, N. J. April 28

By a first-class all around TIN and SHEET IRON WORKER; 16 years' experience at all branches of trade; honest and sober; permanent position for one year; in and outside work; wages moderate; city or country. Chas. Miller, Ballston, N. Y. April 28

By a first-class TIN and SLATE ROOFER; 15 years' experience; city or country work. Timothy Coffey, Hempstead, L. I., N. Y. April 28

To travel in North Carolina, South Carolina and Georgia with a line of hardware, stoves and house furnishing goods; best of references. "R. L. L., Jr.," Box 262, Raleigh, N. C. April 28

By a young married man with eight years' experience at country tinning, plumbing and furnace work. "F. D. K.," Chateaugay, N. Y. April 28

By a TINNER of 30 years' experience; 20 years in one shop, but desires a change; best of references; steady. Chas. Cable, Torrington, Conn. April 28

With reliable firm by a first-class CORNICE and TIN WORKER; competent to handle help to advantage; best of reference if desired. "L. H.," care *The Metal Worker*, New York. April 28

Would like to hear from those who are in need of a good first-class PLUMBER, GAS, STEAM and HOT WATER FITTER, as well as TINSMITH. P. O. Box 277, Vergennes, Vt. April 28

By a first-class PLUMBER. Edward Murphy, 167 East Eighty-ninth street, New York. April 28

As FOREMAN and JOURNEYMAN PLUMBER; thoroughly capable in heating, ventilating and the most improved methods of sanitary plumbing; engines, pumps, rams, &c.; qualified in estimating on all kinds of work; references. "E. H. C.," 173 Speedwell avenue, Morristown, N. J. April 28

By a first-class TINSMITH; 18 years' experience at all branches of tin and sheet iron work; can estimate work from plans; three years at Trade School on pattern work; sober and honest; married; wages moderate; steady work for one year; country preferred. Harry Hartwick, Saratoga, N. Y. April 28

As TRAVELING SALESMAN, EXHIBIT SALESMAN, or DEMONSTRATOR on steel ranges; have an experience of several years; can furnish A1 references. J. M. Webber, 27 Decatur street, Cumberland, Md. April 28

Steady position by a RANGE, HEATER and FURNACEMAN; seven years' reference. Oscar Martin, 1553 Dean street, New York. April 28

By a PLUMBER of 11 years' experience. A. Miller, 113 N. College street, Schenectady, N. Y. April 21

Young married man of 30, at present holding a position with a good firm, wishes to make a change; competent to do all kinds of in and outside work, also a thorough heater, range and furnace workman; state wages. "Tin and Sheet Iron Worker," 723 Mulberry street, Baltimore, Md. April 21

By a first-class PLUMBER; fancy wages not an object but steady work; can furnish all tools from a share hook to a machine for tapping water mains. "S. B.," 30 Woodlawn avenue, Norwalk, Ohio. April 21

By a TIN and SHEET IRON WORKER of nine years' experience; can do all outside and inside work and general jobbing; a single man; can furnish good references if required; would like a steady position in city or country. H. A. Wolfson, 73 East 106th street, New York. April 21

As MANAGER for plumbing, gas fitting, hot air heating and tin work department of hardware business, by a man of 24 years' experience; can estimate from plans; is a good buyer; can furnish first-class reference. "Manager," care *The Metal Worker*, New York. April 21

By single man, 31, who has had 16 years' experience in railroad, tin, copper and steam fitting shop; especially good at steam fitting and iron pipe bending; must have opportunity to learn joint wiping and lead work; present wages, 32½c. per hour, but will work cheaper for chance to learn. H. L. Graham, Georgia R. R. Shops, Augusta, Ga. April 21

By PLUMBER, STEAM, GAS and HOT WATER HEATER, experienced in these branches; good references; sober and reliable; wages moderate; Western States preferred. George S. Weir, Bloomingburg, N. Y. April 21

By a young man who can do all kinds of tin and sheet iron work, plumbing, gas fitting, furnace work and anything that comes to a country shop; references. "Tinner," 6228 Broad street, Pittsburgh, Pa. April 21

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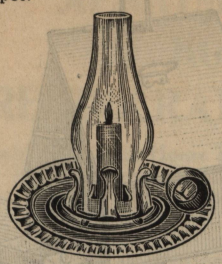

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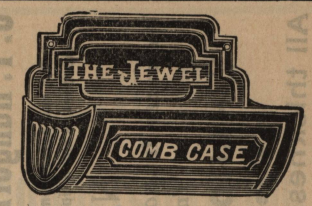

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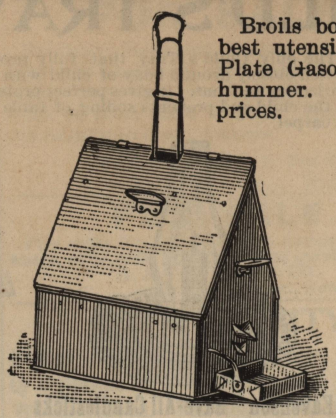

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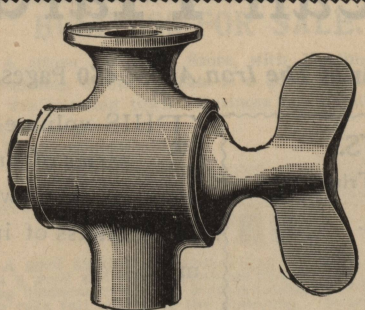

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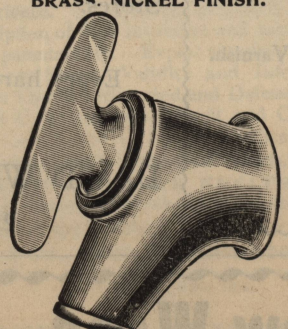

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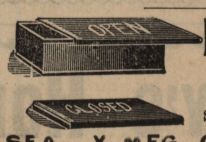

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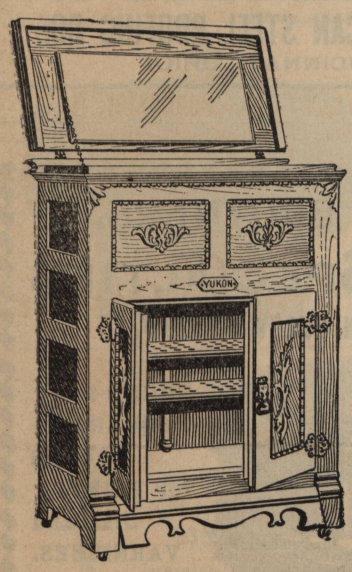

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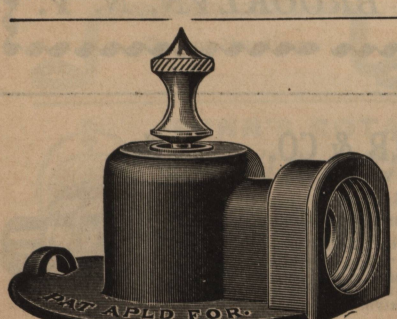

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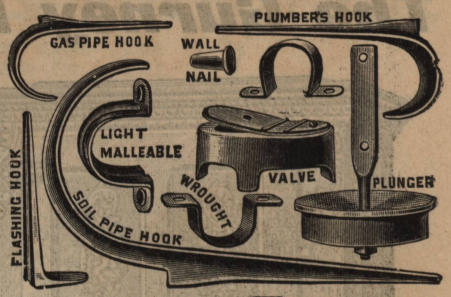

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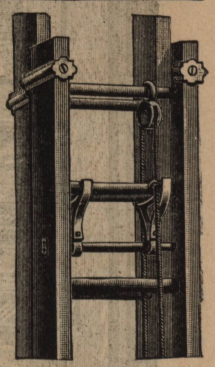

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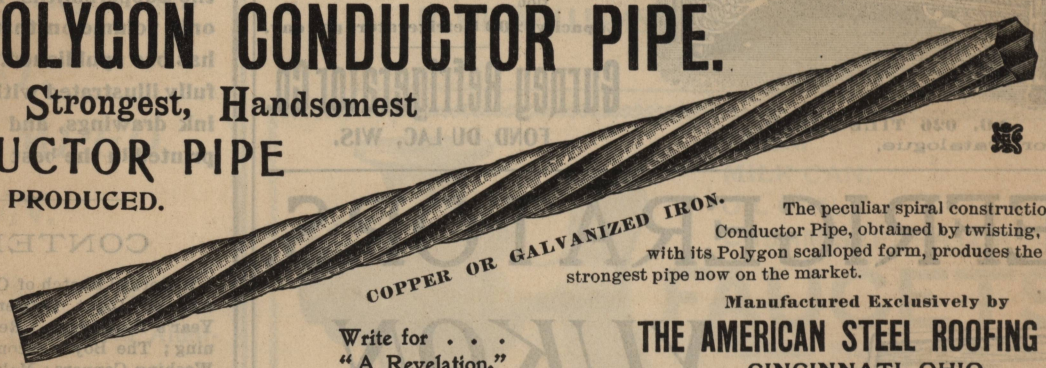

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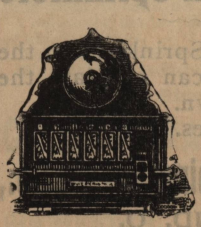

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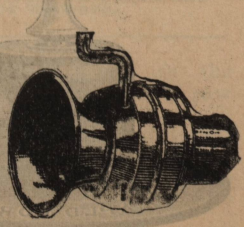

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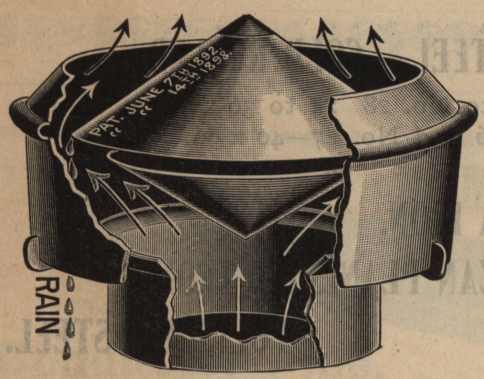

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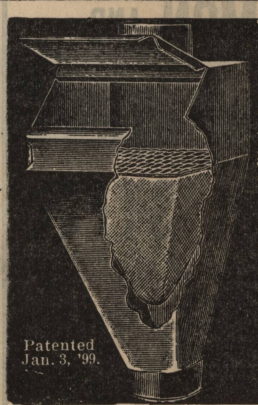

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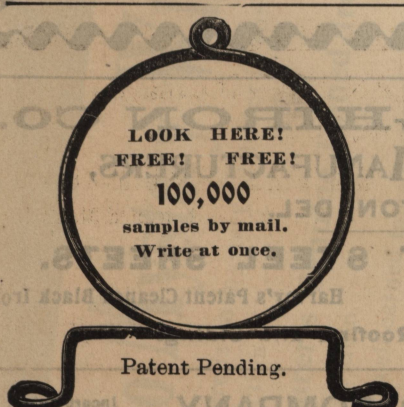

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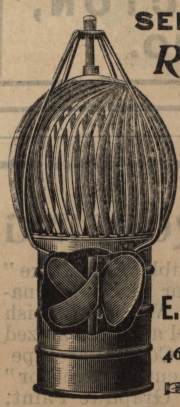

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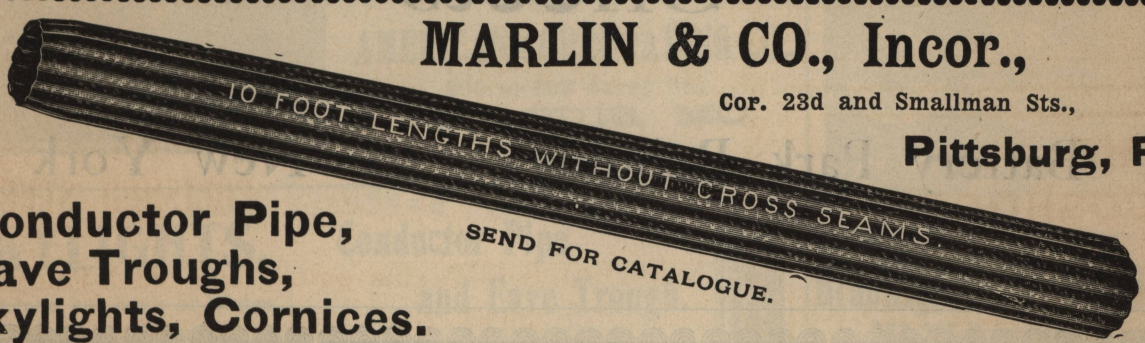

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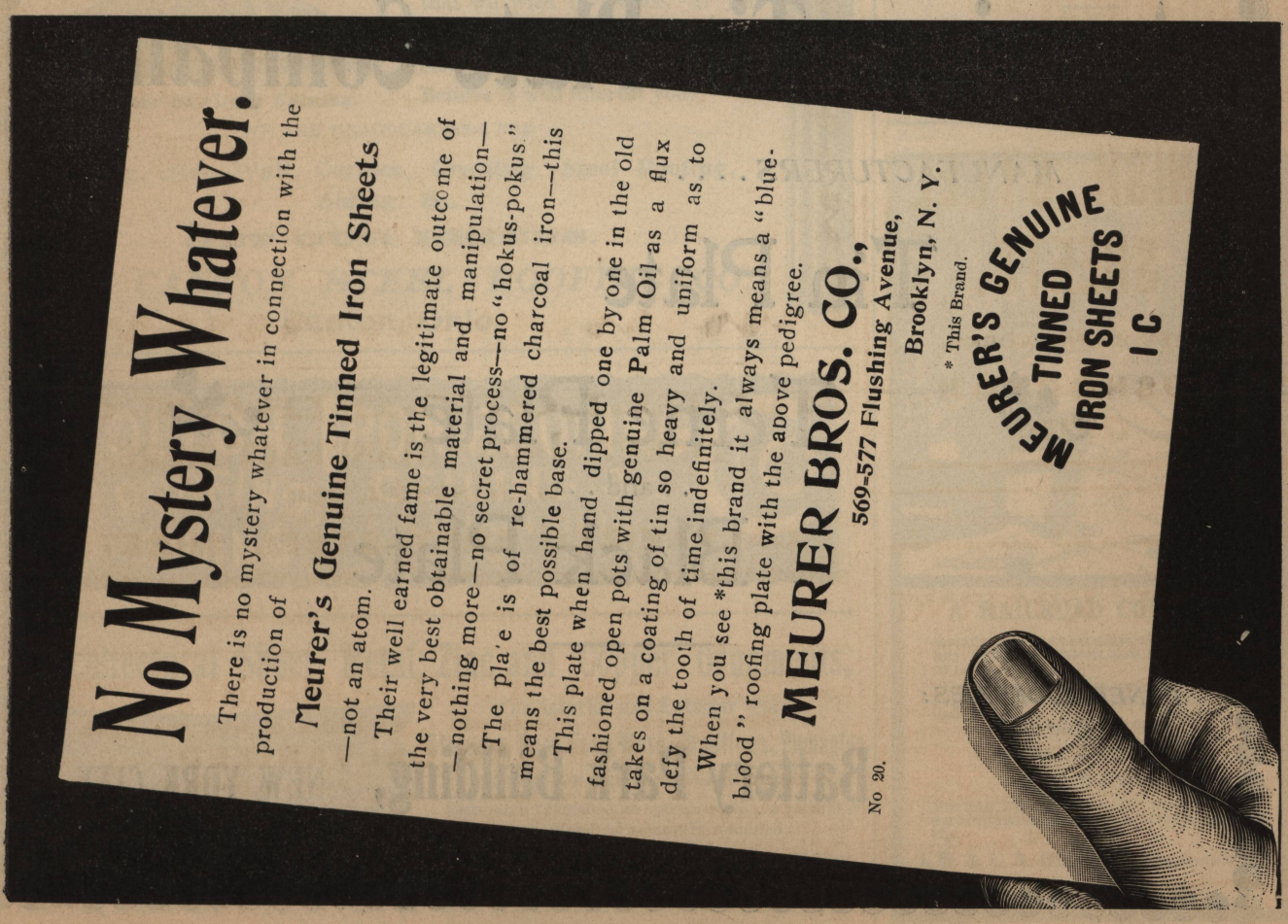

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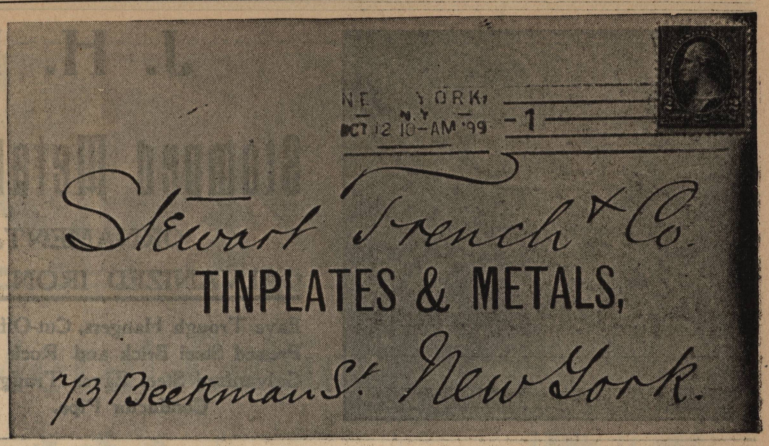

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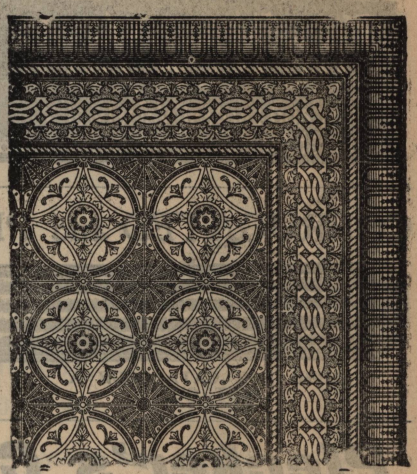

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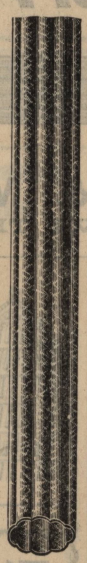

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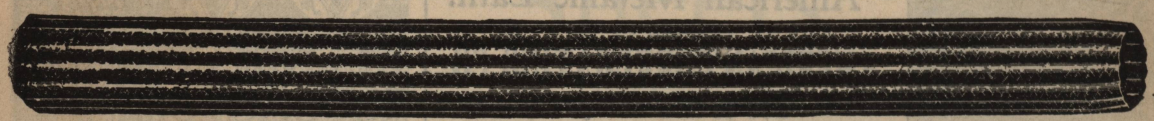

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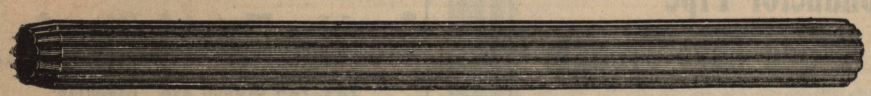

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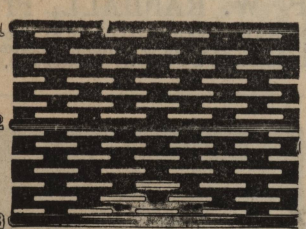

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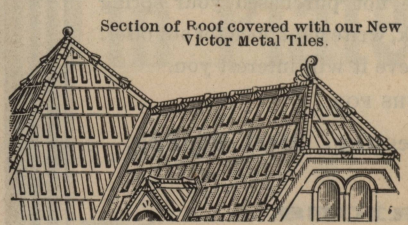

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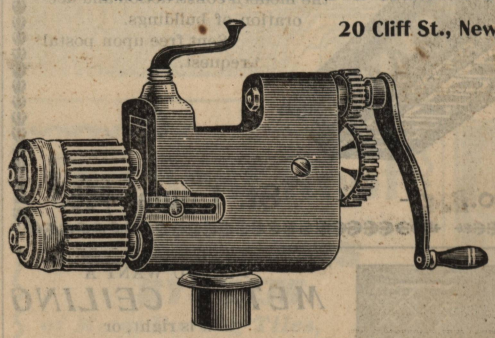

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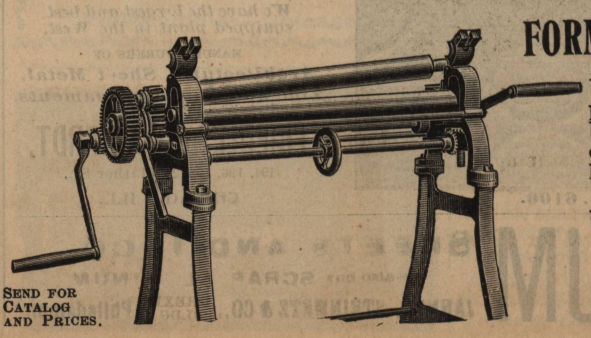

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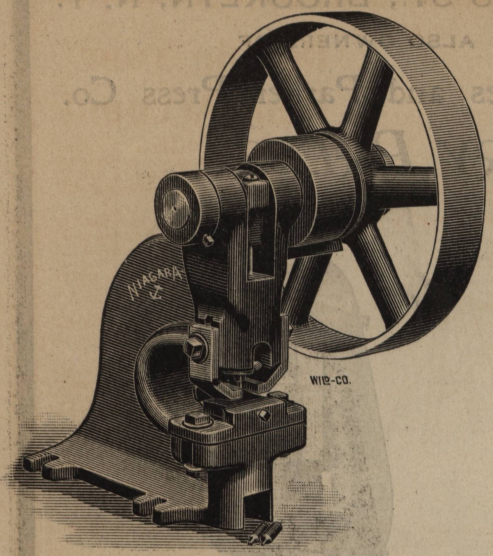

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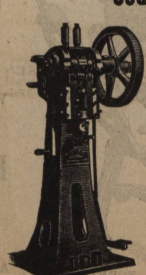

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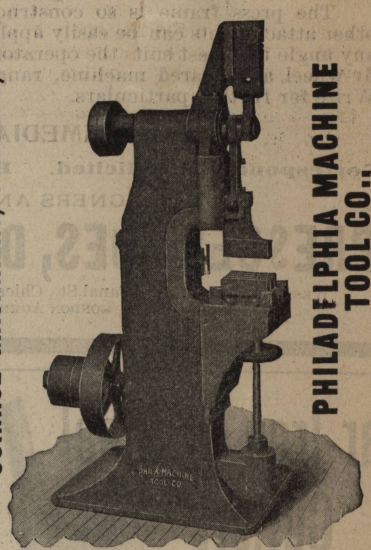

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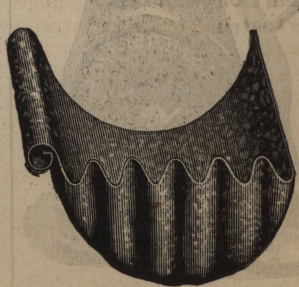

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I see my Future in the Fire,
And oh! 'tis simply Grate."
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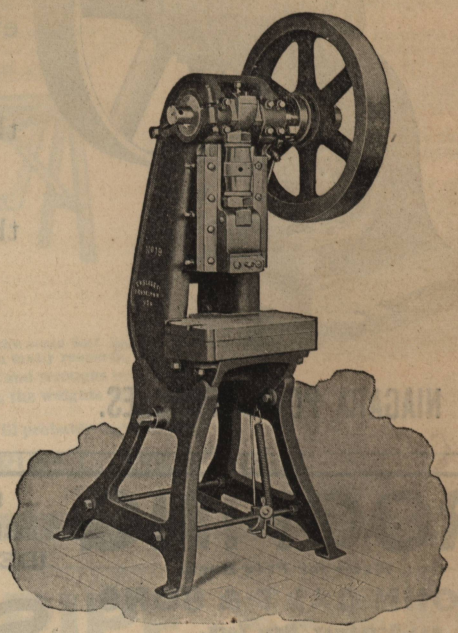

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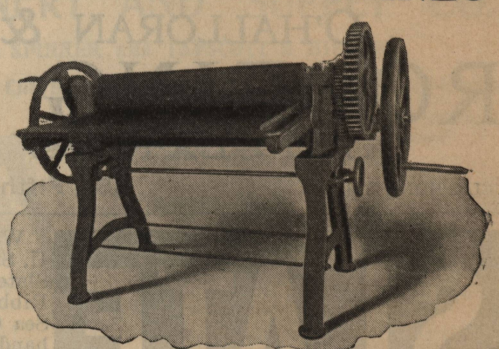

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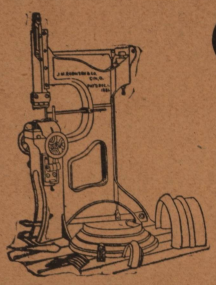

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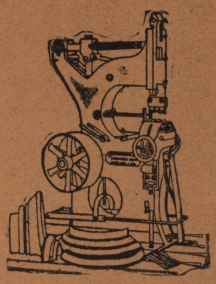

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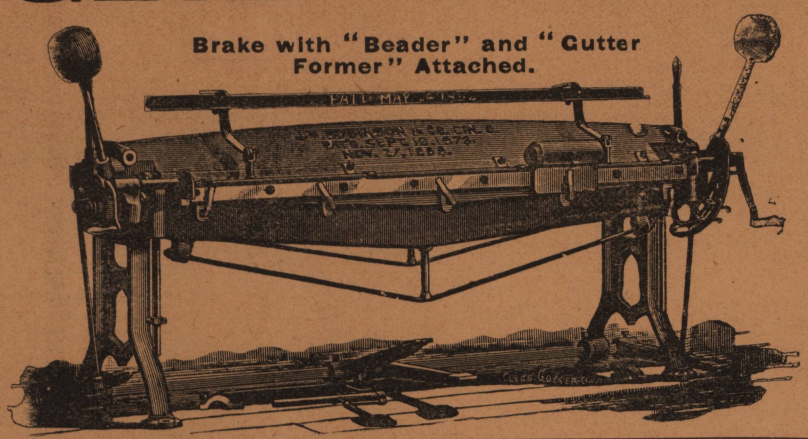
Brake with "Beader" and "Gutter Former" Attached.



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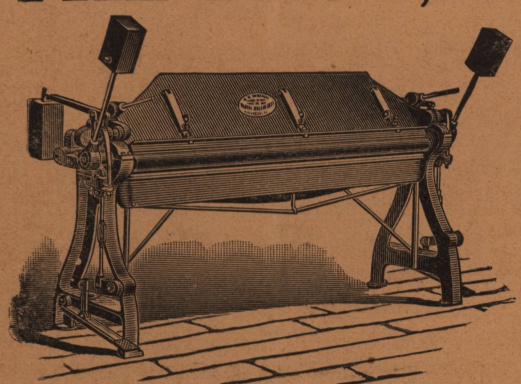

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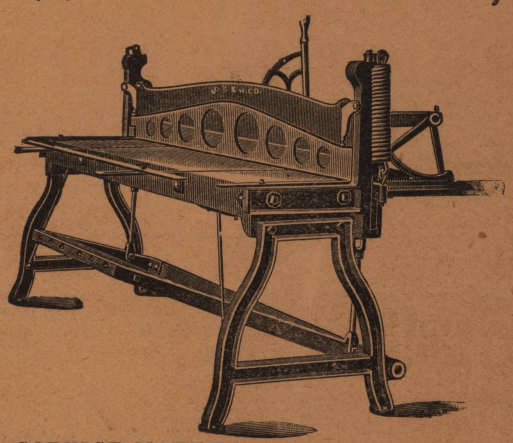

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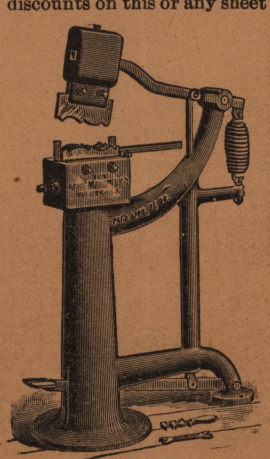

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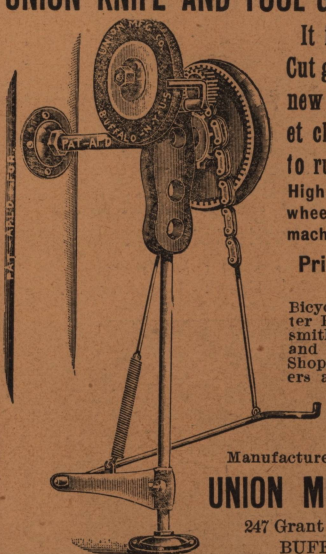

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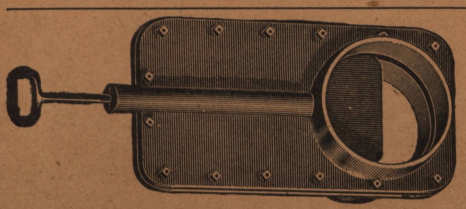

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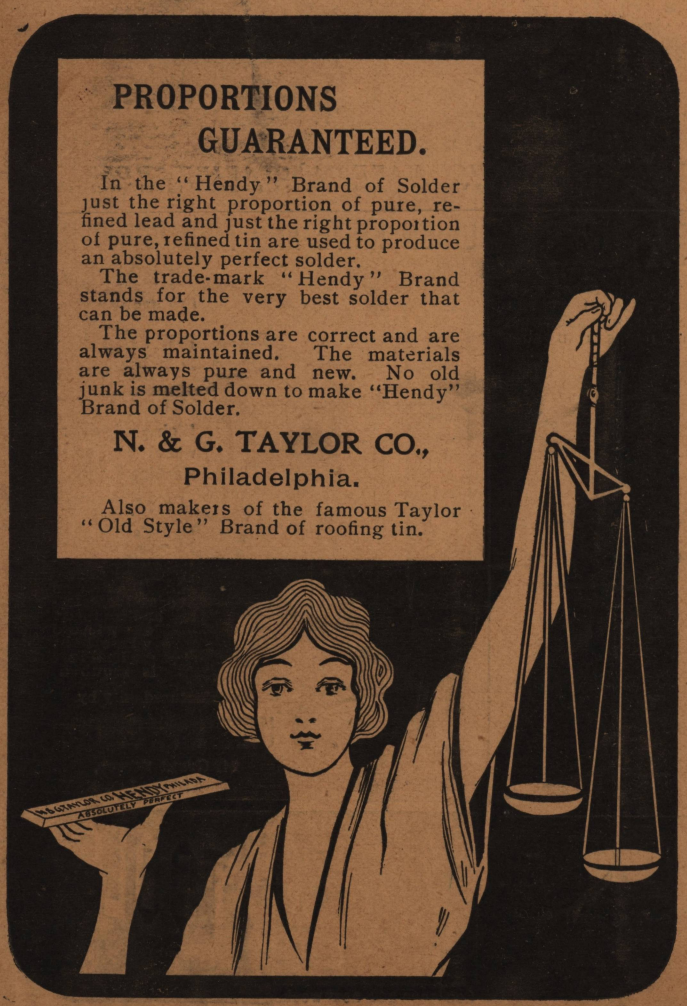

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